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FIVE MEN GREAT IN SCIENCE.

ALEXANDER VON HUMBOLDT, LEIBNITZ, HERSCHEL, LIEBIG, BARTH.

THE portraits which make up the group now offered to the consideration of the reader, represent five of the most distinguished men who have shed lustre upon modern civilization. Each in his sphere was a leader, opening up departments of science hitherto unknown or unexplored, and each contributed vastly to the world's knowledge of useful arts. No one can look carefully at their heads and faces without discerning elements of greatness—without having the conviction forced upon him that each was eminent in some sphere. The splendid philosophical brain of Humboldt would arrest the attention of the most superficial observer. His magnificent head is large in all parts. The Perceptives across the brow do not appear so strongly developed as they really are, because the upper part of the forehead is so massive; but he was remarkable as a man of ob-

servation and scientific criticism, and chiefly remarkable for that reflective tendency to co-ordinate facts, and work them into philosophy and sound ideas, that made him capable of writing the "Cosmos." The elevation of the head from the opening of the ear and from the eye was great, giving a very high head in front in the region of Benevolence, Imitation, and Invention, and that Spirituality which supplies the sense of a higher and better something which we have not yet reached, and which combining with Constructiveness enabled him to theorize in respect to facts in a manner at once clear and apparently historical. Conscientiousness and Firmness, located on the back part of the top-head, show perseverance, steadfastness, and unyielding determination to master his surroundings, and also integrity of purpose, or the honesty of spirit which rendered his observations and his descriptions and explanations credible. Thus it is that in reading his works one gets an idea that he is thoroughly sincere and upright.

The side-head, in which are located the organs of Selfishness, were not particularly strong. His organization indicates discovery, speculation, theory, morality, and persistency. He had a predominance of the Mental-Vital temperament, the first giving him a studious tendency, the second giving him healthfulness and the power to recuperate.

LEIBNITZ.—This head is unfortunately robed with a wig, and hides much of the contour, but we see by his prominent features an indication of power and toughness; and by the pointedness and comparative delicacy of the features also susceptibility and intensity. His was the Motive-Mental temperament, giving quickness and toughness. The prominence of the lower part of the forehead shows observation, the desire to investigate and acquire knowledge, and to be particularly positive and certain in his knowledge. The middle of the upper part of the forehead was prominent, showing criticism, analysis, discrimination. At the extreme top of the forehead, in the center, he appears to show the biographical faculty or the sense of character, and the tendency to describe it. He would have succeeded well in mental philosophy, *per se*. The forehead is high and rather broad in the upper part, indicating a desire to organize his knowledge, and investigate the philosophy of facts. The upper central line of the head was high and rather sharp, showing sympathy, reverence, and stability, and we think he had large Self-esteem, which gave him confidence in his ideas, and the disposition to lay down a law as if he were the end of the law in the matter.

HERSCHEL.—In this organization the reader will observe a massive and bony face, with a large, short neck, and deep, broad chest, which are indications of power, endurance, hardihood, and positiveness, and clearness of mind. He had a great base of brain, which gave him uncommon positiveness and force, and the tendency to grapple with difficulty and opposition, to meet and master whatever stood in his way. We see in his head also large Acquisitiveness, which gave him the desire for property, and the tendency to appreciate economy. He had large Constructiveness; his head was full outward and backward from the ear across the temples, where Constructiveness is situated. His mechanical

talent was remarkable. His invention of apparatus and of instruments would have placed him in a first-rate position in any department of mechanical art. His immense perceptive organs, which give such prominence to the lower part of the brow, make him one of the most conspicuous specimens to illustrate powers of observation, ability to gather knowledge and retain it in detail. The line of organs situated midway of the forehead were also large, giving him an excellent memory, and a clear sense of local position. His Order was developed as indicated in the portrait by the squareness of the lower outer corner of the forehead above the outer angle of the eye. He was one of the most systematic of thinkers, and arranged his knowledge in such a way as to have it always at command. The superior part of the forehead shows large Causality and Comparison, and though the head does not seem so square as Humboldt's, he was a great critic and a sound thinker, adapted better to physical science than to metaphysics or to moral science. Humboldt would have taken good rank in moral philosophy and mental science. Herschel's head was enormously developed above and about the ears, indicating courage, restlessness, and the ability to push his cause, smite his way through difficulties, and make himself master of the situation. His Language appears to have been very well developed. He has a very fine head and face, capable of usefulness in any department of science or art, or in any field of business. Had he been living in these days, he might have been a great railroad king, his own projector and surveyor, capable of managing all the details, of mastering his men, and making everything go like clock-work.

LIEBIG.—This head and face indicate delicacy, spirit and precision, method, practical talent, power to gather knowledge and hold it, with more than the common share of literary ability. Had he adopted a literary course, and theology as his channel of effort, he would have made himself distinguished, less so, perhaps, than he has done in chemistry. He was not inclined to confine his research to the laboratory, science and wisdom, but he extended the practical value of chemistry to agriculture and the mechanical arts. To him the theory was of but little value, but practically his idea was, "Of what use is it? How can it be applied to practical purposes?"

He was developed in the realm of beneficence. Benevolence was large, and his labor had in it a special practical tendency toward benefiting mankind, not simply to make himself distinguished as a scholar. His Firmness must have been enormously developed, and having strong Individuality he would follow a given line of effort to the end, however far that end might lead him. He had Self-esteem enough to believe in his own work, and to give such stamp and rank to his discoveries as were due to their merit; in short, his modesty, though he was very respectful and polite, did not prevent his assuming the truth as he understood it, and impressing it upon the attention of the world. He had a full share of the force which gives efficiency to character, and without doubt he had a high moral sense, and so far as he sought fame he desired knowledge in such a way that he would be kindly remembered for the good he had accomplished, rather than for brilliant manifestations of greatness.

BARTH.—In this organization we see smoothness and harmony, and a good degree of delicacy—indications that he inherited from his mother. The temperament is as nearly harmonious as may be. If there were any lack it was in the Motive temperament, which gives definiteness and endurance, and the desire to make a way through difficulty. This organization would seek to glide smoothly, to make a path without great friction. He had Constructiveness and the perceptive organs large, which served to give him executive talent and to invent, and to adapt himself to his surroundings. He would have done well in art or in mechanism or in engineering; would have done well as a scientist, in physiology, in metallurgy, in natural history; and he would have succeeded as a financier. His respect for himself gave him dignity; his respect for power and greatness rendered him polite, deferential, capable, and enabled him to influence people, especially those in eminent position. He could make friends wherever he chanced to be, and at the same time not lose his identity, or place himself in the power of others. He had courage and policy and tact, but not so much caution or prudence or fear. He was a man of harmony and balance in intellect, with that calm force and self-reliance which give sustaining power in the use of mind. He was not rash, but rather shrewd, wise, judicious, able to accomplish results which rashness and dash fail to secure. There are few men who have such calm interior reserve power, who are as free from excitement. Then he was remarkable for his intuition, which enabled him to appreciate that which ought to be done at a glance, and generally secured the desired results at the first effort.

FREDERICK HEINRICH ALEXANDER VON HUMBOLDT, the greatest of German naturalists, was born in Berlin, September 14, 1760. He and his eminent elder brother, Wilhelm, were educated at home with special care in the natural sciences. He studied at the University of Frankfort-on-the-Oder in 1787, and the following year returned to Berlin, where he applied himself to the technology of manufactures and to the Greek language. During his long and brilliant career, there was scarcely any branch of natural science with which he did not make himself acquainted or familiar, besides acquiring languages and becoming informed in the various departments of learning. At the Mercantile Academy in Hamburg he studied book-keeping and familiarized himself with counting-house affairs and practiced modern languages, preparing himself for a visit to the tropics. On a visit to his mother the following year he obtained permission to engage in practical mining and went to the mining academy at Freiberg, and while there wrote a description of the subterranean flora and an account of his experiments on the color of plants withdrawn from light and surrounded by irrespirable gases. With Freislebin he made the first geognostic descriptions of one of the Bohemian mountain ranges. In 1792 he was appointed assessor in the mining departments, and subsequently became superior mining officer in the Fichtelgebirge. From this time he made numerous scientific journeys in Europe, was employed in Governmental affairs, and accumulated material for works which he subsequently published.

On the death of his mother he resolved to prosecute his purpose of a great scientific expedition. He visited the volcanoes of Vesuvius, Stromboli, and Ætna. While in Paris he became acquainted with the future companion of his travels—the young botanist, Bonpland, in whose com-

pany he appeared in Madrid in 1799, where he had an interview with King Charles V., who opened to his exploration the Spanish possessions in Europe, America, and the East Indies. He arrived at Venezuela, July, 1799, making scientific observations on the way. After spending five years in America, where he had accumulated a larger store of observations and specimens in all departments of natural science than all previous travelers, he embarked for Europe. After his return he was engaged in scientific investigations and filled important Governmental positions. In 1829, under the patronage of the Czar Nicholas, he undertook an expedition to Northern Asia, the Chinese Dzungaria, and the Caspian Sea. He is said to have pursued his scientific labors in his advanced years with undiminished zeal and energy, and died in Berlin, May 6, 1859. No doubt the physical exercise necessitated by his travels and investigations contributed greatly toward sustaining him in his arduous mental pursuits.

GOTTFRIED WILHELM VON LEIBNITZ, a distinguished philosopher and scholar, was born July 6, 1646, at Leipzig. He was instructed in the elementary studies of a school in his native city, but made his chief advancement in miscellaneous learning during his youth by private reading in a library. He studied with the intention of devoting himself to the law, and spent some time at the University of Jena, and on his return to Leipzig presented himself for the degree in law. He had prepared for the occasion two remarkable essays, but was refused the degree on account of his youth. In his twentieth year he graduated at Altdorf and was offered a professorship, but declined it, preferring the post of secretary and tutor in the family of Baron von Boineburg.

In 1672 he accompanied Boineburg's sons to Paris, and there submitted to Louis XIV. a plan for the invasion of Egypt. In the course of his tour, which extended also to London, he formed the acquaintance of the most eminent philosophers of France and England, and among them of Newton. He acted as privy counsellor and librarian to the Duke of Brunswick, and in a tour of historical exploration, prepared a series of works illustrating the history of the house of Brunswick. His private studies were chiefly philosophical and philological, and on these subjects his correspondence was very extended. He organized the Academy of Berlin, of which he was the first President; made a plan of the since celebrated Academy of St. Petersburg for Peter the Great, who bestowed upon him a salary of one thousand roubles, with the title of Privy Counsellor. He was eminent in almost all departments of learning, but it is chiefly through his philosophical reputation that he lives in history. The most remarkable peculiarities of his philosophical system may be reduced to—his doctrine as to the origin of ideas, his theory of monads, the "pre-established harmony," and the theory of optimism. There was an unpleasant controversy between him and Newton as to priority in the discovery of the method of the calculus. He never married, and seems to have had little method in the regulation of his daily life aside from assiduous application, for sometimes he scarcely left his desk for months. He died at Hanover, November 14, 1716.

SIR WILLIAM HERSCHEL was the son of a mu ician and educated for the profession of a musician. He was born at Hanover, November 15, 1738, and became a teacher of music in the town of Leeds, England, in 1757. In 1766 his attention seems to have first been turned to astronomy, and having fashioned a telescope for himself, he made in 1780 his first discovery—that of a new planet, now called Neptune. This discovery led to his appointment as private astronomer to George III. He took up his residence near Windsor, where he continued his astronomical researches, being assisted by his sister Caroline. He married a

Mrs. Mary Pitt, by whom he had one son, John, who also became a distinguished astronomer. His catalogue of double stars, nebulæ, etc., and tables of the comparative brightness of stars, and his researches in light and heat, would of themselves entitle him to the first rank as an astronomer and natural philosopher. His death took place at Slough, his residence near Windsor, on the 23d of August, 1822.

JUSTUS VON LIEBIG, one of the greatest of chemists, was born at Darmstadt, May 12, 1803. He studied at Bonn, received the degree of M.D. at Erlangen, and in 1822 went to Paris, where he studied chemistry. Here he read a paper on fulminic acid, which attracted the attention of Humboldt, and led to his appointment as professor of chemistry at Giessen, where he established a laboratory and gave instruction in chemistry, and labored in his special department of natural science with great activity for more than a quarter of a century. In 1852 he accepted a professorship in the University of Munich, and in 1860 was appointed President of the Munich Academy of Sciences. He gave special attention to organic chemistry, in which he made many discoveries and did much to improve the methods of analysis. His researches have tended greatly to the advancement of the science of agriculture, and also to a better understanding of the relation of organic chemistry to physiology and medication. His "Familiar Letters on Chemistry" are an example of the grace and lucidity of his style. In all his investigations he paid strict attention to what he considered truth and candor, although he was sometimes unsparing and bitter in his criticism. He has been greatly esteemed in America; his works having had a wide sale here, and it is said he at one time contemplated making the United States his home. He died in Munich, April 18, 1873.

HEINRICH BARTH was born at Hamburg on the 19th of May, 1821. He received his education in his native town and at Berlin. He became one of the greatest of African explorers—starting on his first expedition to that country in 1845, and proceeding along the Algerian coast, making excursions into the interior to Tunis, Tripoli, and Bengazi. On his journey to Cairo he was attacked by a band of Arab robbers and severely wounded, losing his effects and papers. Before his return to Berlin he extended his researches into Egypt, Sinai, Palestine, Asia Minor, and Greece; being absent from his native country for three years. A part of the account of this journey was published. He made a second expedition to Africa as a scientific companion to Mr. James Richardson, who was charged with a political and commercial commission to Central Africa, but he pursued his researches principally alone; being separated from Mr. Richardson and Dr. Overweg (also one of the party) most of the time, until finally at their death, caused by the unfavorable influences of the climate upon their constitution, he was left quite alone. This expedition, which embraced upward of 12,000 miles of travel, was attended by great hardship and danger, an account of which may be found in his "Travels and Discoveries in Central Africa," published in five volumes, London, 1857–58. He died at Berlin, November 25, 1865.

HATES.

I HATE to press unto the lip
The cup from which 'twere wrong to sip;
For well I know 'twill often go
Where harm must come and often woe.
I hate to say the cruel word
That stings whene'er by mortal heard;
For well I know 'twill often go
To deaden hopes and pain bestow.
I hate to turn my head away,
And hand withhold in saying Nay;
For well I know 'twill often go
To make our charity too slow.
I hate to check the thought to kiss
The dear ones of my life; for this
Full well I know, 'twill often go
To deaden love where love should grow.

HORATIO CRAIN.

NOTES ON THE PHYSIOLOGY AND PATHOLOGY OF THE BRAIN.

[ABRIDGED from the original article, published in *The Journal of Psychological Medicine*, October, 1879].

AS additional elements in the question now being raised in regard to the nature and merits of Ferrier's views, I would add that: (1) The "motor centers" are said to differ in their position on the cortex by different experimenters; thus Furstner disallows Ferrier's centers; that (2) the response of the "centers" to the same measure of stimulation varies from time to time or occasionally. Dr. Dodds writes: "Sometimes centers whose action is *usually easily* demonstrated can not be caused to react even by a powerful stimulus;" (3) Whilst the susceptibility of the posterior lobes of the cerebral mass is denied by some writers of eminence (by Carpenter, for instance), others have affirmed the contrary; thus "Dupuy has shown that in dogs, electrization of points situated at the posterior part of the cerebral hemispheres *will* give rise to *muscular contractions*" (Dodds). Furthermore, Hermann "denies" in the most unconditional manner "that the different movements produced on stimulation of different cortical areas drives us to the conclusion that the cortex forms the center for those movements" (Dodds). Thus far it appears that the stimulation of any one or other portion of the cortex cerebri can not be so localized as to call forth, simply and exclusively, the function of the part operated on. The evidence, then, as above shown, is altogether averse to the teachings of Dr. Ferrier; and such averse or negative evidence culled, as is seen from the writings of Dupuy, Duret, and Hermann, was, strange as it may seem, put forward by the illustrious Gall himself, something like sixty years ago. In his "System of Phrenology" are found these words, viz: "It is a subject of constant observation that, in order to discover the functions of the different parts of the body, anatomists and physiologists have always been rather disposed to employ *manual means* than to accumulate a great number of physiological and pathological facts; to combine these facts, to reiterate them, or to await their repetition in case of need, and to draw slowly and successively the proper consequence from them, and not to announce their discoveries but with a *wise reserve*. This method, at present the favorite one with our investigating physiologists, is imposing from its *materiality;* and it gains the approbation of most men by its promptitude and its *apparent results*. But it has also been constantly observed that what has appeared to have been incontestibly proved by the mutilator *A*, either did not succeed with the mutilator *B*, or that he had partly found in the same experiments all the proofs necessary to refute the conclusions of his predecessor. It is but too notorious that similar violent experiments have become the scandal of Academicians, who, seduced by the attraction of ingenious operations, have applauded with as much enthusiasm as fickleness the pretended glorious discoveries of their candidates. . . . . In order that experiments of this kind should be able to throw light on the functions of each of the cerebral parts, it would require a concurrence of many conditions impossible to be fulfilled. It would first require that we *should be enabled* to restrain all the effects of the lesion to that portion only on which the experiment is performed; for if excitement, hemorrhage, inflammation, etc., etc., affect other parts, what can we conclude? and how can we prevent these inconveniences in mutilations either artificial or accidental? It would be necessary that we should be able to make an animal whose brain has been wounded and mutilated — who is filled with fear and suffering—disposed to manifest the instincts, propensities, and faculties, the organs of which *could not have been injured or destroyed*. But captivity alone is sufficient to stifle the instincts of most animals."*

* How much have these few words of Gall the character of prophecy! How surely do they go far to cover

Furthermore, it should be known, and well known, that Gall was aware of the effects of the application of a stimulus to the brain's surface; and that he maintained, in direct opposition to the current doctrines of the physiologists of his day, and to "the asserted proof to the contrary afforded by the experiments of Flourens and other mutilators, *the competency of the surface of the brain to originate muscular movements.*" This very interesting and important fact is recorded in a private letter now extant, from Gall to Baron Retzer, bearing date 1798.*

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the objections made, and very properly made, to the experiments of the Ferrier school! There is, however, one element of difficulty and doubt which Gall's apparent foreknowledge did not cover or embrace; that element is seen in chloroform. However, in spite of the inevitable fear or "excitement" of the dog or monkey —due to the preliminary restraints imposed on the animal—in spite of the "lesions" or "mutilations" themselves, and in spite, too, of the inhalation of a poisonous compound—the result of all which is a condition of being as purely artificial and abnormal as such can well be—it must be confessed that the results are of some value, although they fail altogether to prove the presence of "motor centers" in the gray matter of the brain, which is *the* prime object sought; and because simply —as Gall puts it—it is impossible "to *restrain the effects of the lesions*," practiced "to those parts *only* on which the experiment is performed;" a position, indeed, which Dr. Ferrier has himself admitted in the following terms, viz: "There is, perhaps, no subject in physiology of greater importance and general interest than the functions of the brain, and there are few which present to experimental investigation conditions of greater intricacy and complexity. No one who has attentively studied the results of the labors of the numerous investigators in this field of research, can help being struck by the want of harmony, and even positive contradictions, among the conclusions which apparently the same experiments and the same facts have led to in different hands. And when the seemingly well-established facts of experimentation on the brains of the lower animals are compared with those of clinical observation and morbid anatomy in man, the discord between them is frequently so great as to lead many to the opinion that physiological investigation on the lower animals is little calculated to throw true light on the functions of the human brain. . . . . The serious nature of the operations necessary to expose the brain for the purposes of experiment, and the fact that the various parts of the encephalon, though anatomically distinct, are yet so intimately combined and related to each other as to form a complex whole, make it natural to suppose that the establishment of lesions of greater or less extent in any one part should produce such a general perturbation of the functions of the organ as a whole as to render it at least highly difficult to trace any uncomplicated connection between the symptoms produced and the lesion as such. Moreover, the degree of evolution of the central nervous system, from the simplest reflex mechanism up to the highest encephalic centers, and the differences as regards the relative independence or subordination of the lower to the higher centers, according as we ascend or descend the animal scale, introduce other complications, and render the application of the results of experiment on the brain of a frog, a pigeon, or a rabbit, without due qualification, to the physiology of the human brain, very questionable, or even lead to conclusions seriously at variance with well-established facts of clinical and pathological observations."

In the *Spectator* for March 3, 1877, there is a review of Dr. Ferrier's "Functions of the Brain," in which the annexed paragraph occurs. It is worthy of notice on account of the strange and present ignorance in regard to Gall and his discoveries—discoveries made and promulgated now close on three generations since:

"A singular and instructive fact, upon which we are inclined to lay considerable emphasis, is that although so many severe operations upon animals have been instituted by Professor Ferrier and others, for the avowed purpose of determining the localization of the various sensory and motor centers, *contemporary physiologists have agreed only to regard the position of a single one as actually settled*, and that was ascertained purely by means of anatomical knowledge, combined with the observation of cerebral disease in human beings, the very nature of the manifestation of such disease rendering it inaccessible to study by means of the vivisection of animals. We refer to the localization of the faculty of articulate and written speech in the third frontal convolution of the left side."

Truly Gall settled the position of the "organ of language." His first successful "localization" was the faculty of "articulate and written speech in the third frontal convolution," but not "of the left side" only. Herein we recognize a grave error of Broca—an error which has been pointed out by many in very recent times. The late Sir James Simpson was, I believe, the first to disprove the position of Broca, and, as a consequence, to fall back on Gall's view of the matter, to the effect that the "faculty" had its location on "the third convolution" of not one only but of both hemispheres of the brain. Though entertaining a high regard for Dr. Ferrier's earnestness in the pursuit of medical science, I am inclined not a little to think with Dr. Brown-Séquard, when he says that "the teachings of vivisection on the functions of the brain and nerves are a tissue of mistakes, created by vivisections, but rectified at last by correct clinical observation during life, and careful examination of the diseased structures after death." The harmony of such views of Brown-Séquard with those of Gall is directly apparent.

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*This fact is highly interesting, and the "extant" letter referred to as from Gall to Baron Retzer is, indeed, of much value. Taking it for granted that Mr. Prideaux has fallen into no error in regard to this letter, then, indeed, must Dr. Ferrier see the mistake he has made in writing thus: "The views of Hughlings-Jackson, published from time to time in the form of scattered contributions to the various medical journals, and now happily being collected by their author, were regarded by many as ingenious, but rather fanciful speculations, and devoid of experimental corroboration, *seeing that all experimenters on the brain had failed to*

However, Gall, unlike the modern "experimenters," duly appreciated such "muscular movements." Gall saw clearly enough what Dr. Ferrier has failed to perceive, viz, that the "movements" begotten were but secondary, and the outcome or effects only of the conduction of the stimulus employed from the surface to the base of the brain, and parts adjacent thereto. To confine the operation of the electrodes to the upper and convoluted surface of the brain would be to beget phenomena of a purely *psychical* nature; but inasmuch as this can not be brought about, else than as an exception to a very general rule, or under circumstances to be considered in another place, then the phenomena induced are necessarily of another, a *motor* character. Such is the close relationship of our mental and bodily natures—*i. e.*, the "psychical" and "motor." Between the convoluted surface of the brain and the basal ganglia so intimate and close a relationship exists in man and animals—so continued is the interchange of impressions from above downward, and from below upward, that the independent action of either, whether in health or disease, may be said to constitute an exception to the rule. To think is for the most part to act and even *vice versa*. The comparative absence of the hemispherical ganglia (Solly) in a large proportion of the vertebrates, whilst it denies them the higher mental attributes, the purest affections or emotions, and the tenderest sympathies, leaves them prone as is man to the various nervous derangements or maladies, so often named in this paper. In man the intimate and close relationship between these upper and lower strands of nervous matter common to the brain and the "medulla spinalis" is shown by the occurrence of epilepsy, or chorea, or tetanus, in him, for example, subject to acute mental anxiety, or suffering from brain exhaustion. The same relationship is made manifest by the loss of brain power (imbecility) common to, or the effect of, epilepsy of long standing. Whilst the first is the effect of diseased action acting from above downward, the second is the effect of morbid action acting in the contrary direction. If Dr. Ferrier were informed of Gall's great and imperishable discoveries; did he know the precision with which Gall and Spurzheim have located on the brain's surface the many primitive qualities, intellectual and emotional, of our mental nature; did he enjoy the many advantages inseparable from a good practical knowledge of Phrenology—if he knew where on the cranium of his friend or neighbor to find the several organs of, say, "Veneration," "Benevolence," and "Wonder"; of "Causality," "Comparison," and "Eventuality"; of "Combativeness," "Constructiveness," and "Destructiveness"—he would then have estimated at their right value the movements or "results" of his experiments; such results would then have been looked at from another or a more truthful stand-point, that is to say, as simply effects of a pre-existing or psychical cause; but this consummation so devoutly to be wished for will yet be realized, or I greatly err. Commenting on Ferrier's views, an eminent writer on matters physiological has these words, viz: "The explanation of the phenomena obtained by the application of stimuli to the surface of the brain, is found in the fact that those innate faculties which require the aid of the muscular system to carry out their behests have the power of originating the movements necessary for this purpose; and hence when Dr. Ferrier applied a galvanic current to the cortical surfaces of the organs of the instinct 'to take food,' 'to seize prey,' 'to destroy,' 'to fight,' 'to construct,' movements of mastication, of 'striking with the claws,' or 'seizing with the mouth,' of 'biting and worrying, of scraping or digging' ensued; whilst the stimulation of the same locality (Constructiveness, which put the forepaws and hind legs in action in the rabbit, would, in the beaver, superadd the motion of the incisor teeth

produce any such phenomena by irritation of the surface of the cerebral hemispheres.

In so recording the failures of "all experimenters," he, Dr. Ferrier, has but repeated what is very generally believed and asserted.

and the tail. What can be more palpable than that the inferences to be obtained from such experiments are not only far more vague and indefinite than those furnished by the employment of the phrenological method, but absolutely incapable of ascertaining the shape, and defining the boundaries of the organs as has been accomplished by Gall in the case of Locality, the shape of which he ascertained to be similar in dogs to its form in man. In short, little more can be said on behalf of these experiments at present than that in a cloudy and obscure form *they lend a vague general confirmation* (*not required*) *to the correctness* of the localities assigned to the primitive faculties by phrenologists."

To Dr. Ferrier, nevertheless, is due in good part the credit of correcting Broca's error in locating the faculty of speech in a portion of the left hemisphere of the brain to the exclusion altogether of the right. Thus far he has confirmed what, indeed, needed not confirmation to those among us who have kept themselves abreast of the progress in psychological science. Gall, it is well known, was the first to locate the memory of words in the lower frontal convolutions, though not in one only, but in both hemispheres of the brain. His followers in this one particular are many, including the late Sir J. Simpson, and Drs. E. L. Fox and Wm. Ogle. Yet a farther credit is Dr. Ferrier's in having written these few words; they would seem to justify the hope expressed above of his conversion ere very long to a sounder mental philosophy than he has yet reached: "I should be inclined to regard the intimate relation subsisting between ideation and the unconscious outward expression of the idea in muscular action as a strong proof of the close local association of the ideational and voluntary motor centers." Now in these words do we not perceive the groove along which Ferrier is moving? must they not carry him even in the near future to the conclusions of the phrenological school? Dr. Carpenter is evidently afraid of anything so desirable, for he writes thus in Vol. iv. of the "West Riding Medical Reports" at page 23: "The analogy afforded by the specialization of *downward* (motor) action, would lead us to anticipate that a like centralization may exist for *upward* (sensory) action; and that particular parts of the convolutions may be special centers of the classes of perceptional ideas that are automatically called up by sense impressions; and anatomical investigation, particularly in the lower animals—in which such ideas may be supposed to prevail almost to the exclusion of the intellectual ideas—may not improbably throw light on this relation. But in regard to those mental processes which mainly consist in the selection, classification, and comparison of distinct ideas, whether perceptional or purely intellectual, *it still seems* to me just as improbable as it formerly did. (1). That there can be special organs for their performance, such as those named "Comparison" and "Causality" in the phrenological system. I consider, therefore, that the results of Dr. Ferrier's experiments encourage the belief, that by the combination of anatomical and developmental study, of experimental inquiry, and of pathological observation, much light may be thrown on the functions, not merely of the several ganglionic centers which are aggregated in the human brain, but on those of the different parts of the great 'hemispheric ganglion' formed by the convoluted layer of the cerebrum."

It may be, however, that when Dr. Carpenter reconsiders the whole matter, and prefers to dwell on the effects of a galvanic current applied to the organs of "Alimentiveness," of "Destructiveness," of "Combativeness," and of "Constructiveness," shown by the movements "of mastication," "of striking with the claws or seizing with the mouth," "of biting and worrying," and "scraping and digging," he may yet farther modify his judgment. In repeating the experiments of Ferrier, it was suggested to Dr. Burdon Sanderson to slice off the gray matter of the brain, and apply the electrodes to the cut surface of the white or fibrous struct-

ure. It was even then found that the same effects to all appearance followed this mutilation of the animal operated on. The fact is of value, inasmuch as it proves that the movements so called forth can be in no way dependent on the gray matter of the convolutions, or rather on any "physical antecedents" occurring thereto, and of which the psychical phenomena observed in the absence of such mutilation are the direct effects. Strange to say, Dr. Carpenter would disassociate these "physical antecedents" from the "mental states themselves," and because, as he puts his objection, "we can scarcely believe that ideas and emotions can be called up by faradization of a cortical substance in animals" "stupefied by chloroform." The criticisms of Dr. Brown-Séquard are, it will be admitted, of an extreme character. He carries his objections to the localization of function as well as of disease of the brain much too far when he affirms that *the conclusion* of "Ferrier's theory is just the same as though he had said that the seat of the will was in the soles of his feet, because by tickling them the muscles of the face were affected."

It is on record that on one occasion when Dr. Ferrier was pursuing his investigations he was so impressed by the intelligent character of the successive actions elicited as to speak of it as "an evidently acted dream." The remark is highly suggestive. Now, had Dr. Ferrier been an adept in matters phrenological, it seems not unlikely that in this case he would have been prompted to seek in the monkey and dog the precise location on the cerebral surface not of motor centers, but of some at least of the many active powers of mind belonging to the animals named. The "successive actions" linked or embodied in this "acted dream," if rightly comprehended or duly analyzed by one competent to the task, a follower of Gall and Spurzheim, it may then have been found of deep and lasting interest. Such "successive actions" it is likely were simply the outward (bodily) signs of an internal mental condition artificially induced; *i. e.*, "the muscular expressions of feeling," as Dr. Maudsley terms them.*

* Dr. Maudsley has put the matter in these words, at page 30 of his work entitled "Body and Mind": "Fix the countenance in the pattern of a particular emotion—in a look of anger, of wonder, or of scorn—and the emotion whose appearance is thus imitated will not fail to be aroused. And if we try, while the features are fixed in the expression of one passion, to call up in the mind a quite different one, we shall find it impossible to do so." The above is in perfect accord with the "*experiments of the late Mr. Braid on persons whom he had put into a state of 'hypnotism,' for when the features or the limbs were made by him to assume the expression of a particular emotion, thereupon the emotion was actually felt by the patient, who began to act as if he were under its influence. We perceive then that the muscles are not alone the machinery by which the mind acts upon the world, but that their actions are essential elements in our mental operations.*"

Startling as all this is, yet is there no room to doubt this "hypnotism," so named by Braid, nor to discredit what is much the same kind of thing) the "mono-ideasm" of the late Dr. Hughes Bennett? Doubtless the phenomena which go by the several names of "hypnotism," "mono-ideasm," and "mesmerism," have a nature in common. That they run into each other and mutually illustrate each other as varieties or modifications of a single force are known to do, there is reason to believe. Such would seem as so many links in the single chain of causation—as elements in Nature's teeming laboratory, wherein all bespeak the reign of law, order, and unity.

J. G. DAVEY, M.D.

Bristol, England.

THE CHARM OF SYMPATHY.—The story is told of a famous lady who once reigned in Paris society, that she was so very homely that her mother said one day, "My poor child, you are too ugly for any one ever to fall in love with you." From this time Madame de Circourt began to be very kind to the pauper children of the village, the servants of the household, even the birds that hopped about the garden walks. She was always distressed if she happened to be unable to render a service. This good-will toward everybody made her the idol of the city. Though her complexion was sallow, her gray eyes small and sunken, yet she held in devotion to her the greatest men of her time. Her unselfish interest in others made her, it is said, perfectly irresistible. Her life furnishes a valuable lesson.

STUDIES IN COMPARATIVE PHRENOLOGY.

CHAPTER III.—*Continued.*

THE SPHENOID IN THE CARNIVORA.

THIS bone in flesh-eating animals, as in the case of the ape, is composed of two pieces, which can be easily detached in the adult animal. The anterior (Fig. 167) and the posterior (Fig. 165), occupy the anterior middle and the middle lateral parts of the base of the brain (see Fig. 9, representing the base of the skull of the

Fig. 165.—Sphenoid of Cat, Upper Surface.

cat). On its upper surface, at the center, the anterior division shows a light or shallow depression, upon which lie the olfactory nerves, q, q, q (Fig. 168); toward the posterior third two openings directed from within outward, and designed to afford a passage for the optic nerves; forward, a hollow separated by a partition, B, and terminating in two appendices, A, A—it is in the two cavities which are separated by the partition, that the cornets lie, on both sides of the vomer; behind, there is a smooth surface, o, o, which

Fig. 167.—Anterior Portion Sphenoid of Cat, Upper Surface.

articulates with the anterior division of the body of the sphenoid.

On its lower surface the anterior sphenoidal division (Figs. 171, 172) shows an osseous crest quite conspicuous, x, x, x, x, and on each side two shallows which are lined in the fresh condition by the guttural membrane. The upper surface of the posterior of the sphenoidal divisions shows a surface of considerable extent (Figs. 167, 168), and is very irregular. We notice two thin plates, b, b, indented on their anterior border, presenting near the inner third two surfaces, a, a, designed to articulate with two sur-

Fig. 166.—Sphenoid of Cat, Upper Surface Outline.

faces placed on each side of the crest, which is seen at the middle part of the inferior surface of the anterior section (Fig. 172, a, a).

At the center we notice a depression, p, which accommodates the pituitary gland; behind it an articulating cavity, n; the lateral parts or the wings of the middle region are considerably extended and slightly hollowed. They come in contact with a part of the convolutions in the inferior surface of the brain, and

Fig. 168.—Anterior Portion Sphenoid of Cat, Upper Surface, Outline.

belonging to the middle lobe. At the base of the wings are seen, as in man and in the ape, openings designed for the passage of certain nerves.

The posterior division shows very much irregularity on its lower surface (Fig. 169).

It affords attachments to certain muscles and the guttural membrane. On its middle lateral part are two kinds of small hooks (or pterygoid processes in the human

Fig. 169.—Sphenoid of Cat, Lower Surface.

sphenoid), and outside of these the lower openings of the holes which we have noticed at the base of the great wings. The sphenoid of the cat articulates with the same bones of the skull as in man and the ape, besides articulating doubly with the parietal, first by its antero-inferior angle, as in man, and next by the bony plate which, as we have seen, divides the parietal into two parts (Fig. 106). As in the ape the sphenoid in the cat lacks the

Fig. 171.—Anterior Part of Sphenoid, Cat, Lower Surface.

frontal sinuses. The body or middle region of the posterior section contains a little spongy tissue; the wings on their paternal parts and all the anterior sphenoidal division are quite entirely formed of compact substance.

Fig. 173.—Sphenoid of Rabbit, Upper Surface.

THE SPHENOID IN RODENTS.

Two bony pieces contribute also to form the sphenoid of the rodent; one anterior (Fig. 175), the other posterior (Fig. 173). The position of these bones has been reversed as compared with the same in animals heretofore considered—for the purpose of examining them more advantageously—and by merely turning

Fig. 170.—Sphenoid of Cat, Lower Surface, Outline.

the book around the reader will have a view of these two parts of the sphenoid as they appear when in the skull. Some differences quite noteworthy as to extent and form exist between these two pieces when compared with the same in the carnivora. The first division is composed of four kinds of wings, two superior and two inferior, the first being much wider. At the center are two openings for accommodating the optic nerves; behind

Fig. 172.—Anterior Part of Sphenoid of Cat, Lower Surface, Outline.

them two small depressions, in which these nerves lie, and which are very long in the rabbit. The lateral parts of the superior wings are smooth and covered

Fig. 174.—Sphenoid of Rabbit, Upper Surface, Outline.

by the lower part of the anterior lobes of the brain and the olfactory bulb; their margin is uneven, so as to articulate with the anterior border of the posterior sphenoidal division, in o, o, o, o, o, o, and

with the frontals in x, x, x, x, x, x (Fig. 176).

Seen below, the anterior sphenoidal division offers nothing of particular interest to us. The posterior sphenoidal division (Fig. 178) is considerably developed. It is formed of two distinct parts; one placed at the center of the body, and two laterals or wings. The body of it has a triangular shape, the great extremity being directed backward, presenting a wide surface covered with cartilage, m, and articulating with the basilar apophysis of the occipital bone. Its anterior extremity being much smaller and thinner is provided with an articulary surface, q, covered also with cartilage; it articulates with the middle part of the posterior margin of the anterior sphenoidal division.

Fig. 175. — Anterior Part of Sphenoid of Rabbit, Upper Surface.

The lateral parts or the wings, c, c, are slightly concave, and show often a multitude of irregular perforations; sometimes these parts are so perforated that the bone has the appearance of lace. The anterior region, on the contrary, presents a smooth aspect, and contrasts on that

Fig. 176.—Anterior Part of Sphenoid of Rabbit, Upper Surface, Outline.

account strongly with the other. Upon the superior surface of the great wings repose the lateral lobes of the brain.

On its lower surface the posterior part of the sphenoidal division appears quite irregular at the middle, x (Fig. 179). The lower surface of the body of the bone shows two processes at the sides of considerable extent, which represent the pterygoids in man; each of these is composed of a small bony blade, separated by a deep fissure. By their union at the base of the pterygoids they form a rounded opening, always seen in the rabbit. In the rabbit and hare, and especially the beaver, these pterygoid apophyses are much developed. In the latter animal they are so large that the inner wing articulates with the ear-drum, and forms thus a wide opening noticeable in front of the ear-bulb. In the cat, on the contrary, there is only a small hook, which represents the interior wing. The position which has been given to the posterior sphenoidal division in our illustration does not enable us to see the rounded opening mentioned.

Fig. 177.—Anterior Sphenoidal Division of Rabbit, Lower Surface.

The sphenoid in rodents is extremely thin, the two divisions being formed almost entirely of compact tissue. A little spongy substance enters into the articulary parts of the main body of it, that portion especially which corresponds to the basilar apophysis of the occipital. Its articulations or connections with other bones of the skull are very numerous; thus, it articulates by the body with the occipital, by the superior wings of the anterior sphenoidal division, and by the great lateral wings with the frontal bones, with the temporals, and even with the

Fig. 178.—Sphenoid of Rabbit, Lower Surface.

Fig. 179.—Sphenoid of Rabbit, Lower Surface, Outline.

parietals, by a little bony tongue which we have remarked at the postero-inferior angle of the parietal. The sphenoid has also connection with the bones of the face by its anterior division.

THE SPHENOID IN BIRDS.

The pieces which represent the sphenoid in the quadrumana early unite in birds. M. St. Hilaire explains this by the activity of their nutrition—a theory which seems to us well founded, if we judge of it by the rapidity with which fractured bones in birds consolidate, and the prompt healing of their wounds. As this bone is found complete, we must content ourselves with considering it pretty much as a whole, or that part particularly known as the body of the sphenoid (Figs. 118, 119–9, Aug. No.) It is upon this that the pituitary gland lies, and that part which represents the great wings, the inferior division of the temporal bone (Fig. 143, Sept. No.), where the quadrigeminal tubercle is lodged. In very young birds—for example, orioles ten days old—the part which forms the body of the sphenoid, and those which compose the wings, are perfectly distinct.

Here terminates our special consideration of the cranium in man and the leading vertebrate animals, and before proceeding to discuss the brain in a comparative manner, we would offer a few conclusions, which are warranted by the data presented, and which we would advise the reader to weigh carefully, reviewing the field if necessary to ascertain their validity.

CONCLUSIONS.

1. The form of the skull of vertebrate animals varies greatly in extent, according to class, order, kind, and species. Each species has a type peculiarly its own, while among individuals are differences in volume, which are at times remarkable, and which explain their differences in nervous capacity.

2. The form of the skull being given, it is easy to estimate that of the brain, excepting, however, in some cases of disease, and in some instances when the sinuses are predominant.

3. The bones which associate in the formation of the skull of vertebrates increase in number as we descend from man to fishes. To have a positive and profound knowledge of human and comparative phrenology, one should possess at least a knowledge of each of these bones in the species which serve for the application of that science.

4. Man is more developed in the anterior part of the skull than any of the lower animals. Next come the elephant, chimpanzee, dog, horse, and the lower apes among the quadrupeds. Parrots, crows, and geese have that region well developed. The turkey, chicken, and several species of shore birds are among those which indicate a small development of it.

5. The complete development of the skull is reached at a period more or less removed from birth; its growth being more rapid in animals than in man, who requires at least twenty-five years for its full maturity.

6. In man the skull shows its sutures at an age far more advanced than in animals. The cranial portions unite earliest in birds. Next come certain carnivora, like the marten, pole-cat, weasel, and badger.

7. The internal surface of the skull shows in a great number of classes, orders, and kinds, depressions in correspondence with the relief or folds of the brain. Man, the quadrumana, all the ruminants, the pachyderms, the solid-hoofed, the carnivora (the mole excepted) are so constituted.

8. The internal surface of the skull of the rodents and birds is smooth, yet depressed or hollowed in harmony with the more salient parts of the brain. In birds generally we find the closest correspondence between the external surface and the contour of the brain—a fact due to the thinness of the bony plates and their almost perfect parallelism. Next come the rodents, then the small carnivora.

9. Age produces changes more or less remarkable in reducing the cranium, its thickness and density. These are frequent in man, but specially in the apes as regards diminution; then comes some of the pachyderms, the badger, and the dog. The rodent and bird experience the least change on account of age.

NAMES AND PLACES.

GLIMPSES OF THEIR DERIVATION.

ALL names of places were once words. Localities were not christened into names given arbitrarily by sponsors. Local names were not given any more than our power of speech or complexion is given us: they are an integral part of the place. But most of these names have long ago become dumb and fossilized, and it is the work of the philologist to disinter the old skeleton, reclothe it with flesh, and make it declare the history it holds in solution. For instance, how the name of the island San Salvador brings before us that night, the seventieth of his weary voyage, when Columbus saw a light gleaming from a new shore, and landing next morning, flung himself on the ground, which he had dreamed of from his youth, while with streaming eyes and grateful heart he declared that the land should be henceforth honored with the name of the San Salvador, or "Holy Saviour," who had conducted him safely through so many perils. The superstition and mysticism of these brave old Spanish voyagers contrast with the general cruelty and licentiousness of their character painfully enough to teach us that godliness (god-like-ness) is not a necessary concomitant of religion. Columbus on his third voyage saw on the horizon three peaks rising from the ocean. He supposed them to be three islands, but on nearer approach they proved to spring from the same mountain, and the devout explorer, recognizing a symbol of the mystery of the Triune God, named the new island La Trinidada, "the Trinity." Similarly, an island appearing to consist of a little mountain perched on the shoulders of a larger one, the Spaniard named it St. Christopher's, or St. Kitts, as reminding him of the legend of St. Christopher carrying the infant Christ.

Many places are called after the ecclesiastical season during which they were discovered. Thus, though Archbishop Trench thinks Florida gained its name from its "flowers," Taylor and others, probably with more reason, consider it so called because discovered on Palm Sunday, or "Pascua Florida," from the flowers with which the churches are then decked. Dominica, or Dominique, tells us in its name that it was discovered on "Dies Dominica," that is, Sunday, and Natal, in Africa, was first seen by Europeans on Christmas day—*Dies Natalis*. The Virgin Isles, almost numberless, are said to have been discovered on the day sacred to St. Ursula and her eleven thousand martyred virgins, and the town of St. Augustine, the oldest in the United States, the islands of St. Helena and Ascension, the river St. Lawrence, and many other places, reveal in their names the day of their discovery.

Ethnology, the science of nations, derives much light from names. They supply us with traces of the history of nations that have left us no other memorials. "Egypt has bequeathed to us her pyramids, her temples, and her tombs: Nineveh her palaces: Judæa her people and her sacred books: Mexico her temple-mounds: Arabia her science: India her institutions and her myths: Greece her deathless literature: and Rome has left us her roads, her aqueducts, her laws, and the languages which still live on the lips of half the civilized world." But there have been many nations whose influences have been absorbed by their descendants; whose languages have faded out, and of whom we would know absolutely nothing, did not their names cling obstinately to the soil, when every other vestige has been swept away. In this way, as the geologist can map out the natural history of the ancient world, so the philologist can trace from the names of its places the annals of a country. In England the different waves of population, Celtic, Roman, Saxon, Anglian, Norwegian, Danish, and Norman, leave their rippling marks on the sands of history. The map shows us that almost all En-

gland was once Celtic; it reveals the extent of the Teutonic settlement, and marks the boundary between the Anglian and Saxon kingdoms; it shows us where the fierce Vikings of Norway effected landings; and tells plainly all the essential features of the Norman Conquest.

Almost the only history we have of a nation which in dim antiquity, doubtless many centuries before Christ, inhabited or ruled England, is found in the word *Britain*. We can not find a trace of this word in the Celtic or Latin, or any other language spoken by the nations which at different times conquered or peopled England. No doubt the Romans called their island-province Britannia, but that is merely a Latinized form of the name they found—they did not make it. So with the Celts who preceded and the Saxons who followed them. But keen-eyed scholars have discovered the essential part of the word, *itan*, in that family of languages now spoken only by the Laplanders and by the Basques among the Pyrenees. These latter were probably the aboriginal inhabitants of Spain, whom Cæsar found there. So that we may presume that long before Celtic times England was inhabited by people of this race, and that when the Celts came they prefixed to the name they found, *Bro*, their word for country, and hence Britain.

It is natural that a superior race coming into a country should give themselves some appreciative title to distinguish themselves from the vanquished. Hence we find many nations calling themselves the "Speakers" or the "People" or "Nation," and all others "the Jabberers" or "Foreigners." The Sclavonians call themselves *Slowjane*, "Intelligible men," the Basques, *Eusculdunac*, "those who have speech," and the earliest name the Germans are known to have had for themselves was "the Speakers." To come nearer home, most are aware that the tribe calling themselves the Dacotahs are, by their neighbors, the Ojibwas, named the *Sioux*, "the enemies." The Egyptians, and after them the Greeks and Romans, used to call "Barbarians," or Stammerers, all who did not speak their language.

It has been elegantly said that the words of a nation's speech are continually clipped and worn down by constant currency, until, like ancient coins, the legend which they bore at first becomes effaced. The process sometimes resembles that through which animal bodies pass, changing every atom in a few years, and yet retaining their identity. For instance, the French *jour*, meaning *day*, is lineally descended from the Latin *dies*, as follows: *dies—diurnum—giorno—jour*; and *duck*, the name of our domestic fowl, has for its direct ancestors the Latin *anas*.

The changes in the names of persons and places are curious and innumerable. At Fort Vancouver an Englishman is (or was a few years ago) called *Kintshosh*, a corruption of King George, and an American was called *Boston*. The common form of salutation was *Clakhowahyah*, explained by the fact that a man named Clark, visiting the place, was saluted by his acquaintance with "Clark, how are you," which was henceforth supposed by the Indians to be the orthodox form of greeting.

Sailors are notorious for their euphemistic changes of the classical names of their war-ships. For instance, on their plastic tongues, *Bellerophon* becomes Billy Ruffian; *Andromache*, Andrew Mackay; *Areolus*, Ale House; *Courageux*, Currant juice; and *Hirondelle*, Iron devil. Our common term "*joss-house*," for a Chinese temple, is merely a sailor's corruption of the Portuguese word *dios*, god.

The respectable surname Semple is derived from the more noble one St. Paul; Sydney, from St. Denis; the rather common English surname Snooks, from the highly reputable Sevenoaks; and Boston is a contraction of St. Botolph's town.

Words coming in from foreign languages are being continually changed into a more homelike form. The beefeaters, certain household servants of the Queen of England, are not so called be-

cause of their well-rounded and rubicund appearance, but because they are buffetiers, or men who stand at the *buffet*. Asparagus is commonly called by uneducated people sparrow-grass; shuttlecock was once shuttle-cork; doormouse is not a kind of mouse, but was once dormeuse; wiseacre has no connection with real estate, but is a corruption of the German weissager; isinglass is not a kind of glass, but an attempt to Anglicize hausenblase, which means sturgeon's bladder; and shamefacedness has nothing to do with face, but is a misimprovement of a good old word used as late as Chaucer's time, shamefastedness. A man who had seen Othello played, wishing to name two of his horses Othello and Desdemona, always called them Old Fellow and Thursday Morning; and when Ibrahim Pacha made a visit to England, he was known to the mob as Abraham Parker.

Cape Horn is not so called because it is the southern horn of America, but from its Dutch discoverer, Hoorn; Orange River and the Red Sea are not so called from their color, but the former because it was discovered by the Dutch in the days of the supremacy of the House of Orange, and the latter is a translation of the Sea of Edom. Fitful Head, which lovers of Walter Scott will recollect as the home of Norna, in "The Pirate," was originally Hirt-fell, the white hill. The horrible way in which elegant Norman names have been contorted and racked by stout-jawed Englishmen is enough to make William the Conqueror and his companions-in-arms rise from their graves. *Chateau Vert* has been twisted out of its delicate lordliness into Shotover Hill; *Beau chef* has become Beachy Head; *Burgh Walter* has been rather improved, in being trimmed into Bridgewater; *Beau lieu* has become the honest English Bewley Woods; and *Bon qué*, the good ford, has been masticated into the indistinguishable Bungay. In Grampound we recognize the Norman *Grand pont;* while some swineherd's hand is visible in the execrable change of *Leighton Beau-désert* into Leighton Buzzard. I have read, that to tourists visiting this town, the sexton of the parish church points out the brazen eagle which forms the lectern, as the original buzzard from which the town takes its name.

Anse des cousins, the "Bay of Mosquitoes," has become, in the mouths of traders or sailors, "Nancy Cousin's Bay;" Livorno has been changed mysteriously into Leghorn; and the Canadian river, with the utterly unmanageable name, Quah-Tah-Wah-Am-Quah-Duavic, has been rolled up, like a bale of carpet, first into Petamkediac, and still further, like the great genie contracted in Solomon's bottle, into Tom Kedgwick.

Most curious changes have taken place in the names of city streets. In London we have Sermon Lane, originally Sheremonier's Lane, so called from being the business resort of the artisans who used to *shear* the bullion, preparatory to stamping it. When Calais was lost to the English, the artisans of two villages in its vicinity, Hames and Guyness, took refuge in England. They were assigned a residence in the east of London, which happening to be near Tower Hill, the usual place of execution, was called at first Hames and Guyness, but afterward, Hangman's Gains. Gramercy Square, in New York city, is not, as has been supposed, of French origin, but named from *Die Kromme Zee*, the crooked lake, a pond which once occupied the site on which the square now stands.

There have been many amusing transformations in the names of English inns. The Belle Sauvage has become the Bell and Savage; the Pige Washall, meaning the Virgin's Greeting, the Pig and Whistle; the Boulogne Mouth, or the mouth of Boulogne Harbor, the scene of a naval victory, has been transformed into the Bull and Mouth; the Bacchanals into the Bay o' Nails; and the Three Gowts (sluices) into the Three Goats.

The names of Norwegian or Celtic deities and demons linger persistently among us. "Old Scratch" is the Skratt of Sweden, who used, with a wild, horse-laugh, to mock travelers lost on the

moors. "Old Nick" is the Scandinavian water-demon, who demands every year a human victim; and it is curious, as illustrating hereditary influences, to notice how many persons in uttering the dreaded name will instinctively lower their voices, as their forefathers did twenty centuries ago, fearing lest the utterance of his name above a whisper might bring his dreaded majesty before them in person. "Deuce take it" is an invoking of the god Tiw, St. Augustine calling him *dusius*. Bogie, the name with which children are sometimes frightened, is the Sclavonian name for God; and the nursery rhyme of Jack and Jill is a northern version of the tides, in the story of Hjuki (the flow) and Bil (the ebb), the two children of the moon. The morning gossamer is the *gott-cymar*, the veil or trail left by the deity who has passed over the meadows in the night.

Physical changes in localities are frequently revealed by names. For instance, the constant recurrence of *ea* or *ey*, the Anglo-Saxon word for island, in the names of places along the Thames, tells us that that river was formerly much wider than now, and dotted with marshy islands. It is said that most islands in the world contain something in their name revealing their geographical nature. Hence, when we find the islands at the entrance to the Zuyder Zee an exception to this rule, we find a confirmation of the historical fact that it is only comparatively recently the Zuyder Zee has been formed by incursions of the ocean. When we learn that the name Etna means a furnace in the Phenician language, we have a strong presumption that in very early times that mountain was a volcano. The English city of Derby means in Danish a "city of wild beasts," showing us what the condition of that region of country was when the Danes landed in England. The Anglo-Saxon *ceapian*, to buy, may be traced in many English words. The common surname *Chapman* meant little more than peddler; *cheap* is an abbreviation of *good cheap*, or good trade, still found in the slang phrase, *dog cheap*. *Cheap* and *chipping* are old names for market-places, preserved in Cheapside and Eastcheap; and Wiclif translates the verse about children sitting in the market-place, "They ben like children sitting in chepinge and spekinge togedre." The Danish form of *cheap* is *cope*, as in Copenhagen. The name of Copeland Islands, near Belfast, Ireland, tells us that the Danes occupied them for emporiums, just as the English in the present day hold the island of Hong-Kong.

But it is not all the truth to say that all names were once words. It is equally true that many words were once names. At first sight, we would not be likely to see in the name of the *peach* that it comes to us from Persia; but the riddle is easily read when we follow it through the French *pesche* (old form), the Italian *pesca*, the Spanish *persigo*, the Dutch *persikboom*, and the Latin *persicum*. The *walnut* is not so called because it is the fruit of a tree which in England is trained along the wall, but is the Anglo-Saxon *Wealh-hunt*, and the German Wälsche-Nusz, indicating probably that it is the nut from Wälschland or Italy. The word *quince* has suffered many changes in its life-time. Chaucer gives us an adaptation of its French form *coing* in the couplet:

> "And many homely trees there were
> That peaches, *coines*, and apples bere."

It is the Italian *cotogna*, and the Latin *cotonium* or *cydonium malum*, the apple of Cydon, a town in Crete. *Brazil-wood* is not named from the country, but strange as it may appear, that vast Empire is named from the wood found there so abundantly. The word *brazil* was known in English long before the country was known. It comes from *braise* or *braza*, live coals, and Brazil-wood is a dye-wood, producing the color of glowing coals. Whisky is a corruption (alas! how great) of the Celtic *wisge*, meaning

water, and *spruce beer* means simply *Prussian* beer. *Shamoy leather* should not be spelled *chamois*, as if it were the skin of the Alpine deer; it is leather from *Samland*, on the Baltic. A *roan* horse formerly referred not so much to color as to breed, telling us that certain horses traced the abode of their ancestors to Rouen, in France. The *lodestone* is not the *leading*-stone, but a corruption of *Lyduis lapis*, the Lydian stone. Our *tabby-cats* are so called because they have the wavy markings of *tabinet*. *Coach* comes to us all the way from Kottsee, a town in Hungary. *Sandwiches* were invented by Lord Sandwich to enable him to remain for twenty-four consecutive hours at the gaming-table. Concerning Sandwiches and Spencers we have the following epigram:

"Two noble earls, whom, if I quote,
Some folks might call me sinner;
The one invented half a coat,
The other half a dinner.
The plan was good, as some will say,
And fitted to console one,
Because in this poor starving day,
Few can afford a whole one."

The *Guillotine* takes its name from Dr. Guillotin, the *bowie*-knife from Colonel Bowie, and the *derrick* from a hangman of Elizabeth's reign. The comic tragedy of *Punch* and *Judy* and their dog *Toby* is probably a relic of an old mystery-play, in which the chief actors were Pontius Pilate, Judas, and Tobias' dog.

REV. GEORGE C. JONES, A.M.

SANDFORD R. GIFFORD, N.A.

IN the death of Sandford R. Gifford, New York city loses a favorite citizen, and American art one of its most gifted and industrious workers. In person, Mr. Gifford was tall and slender, the Motive temperament expressing itself in his bony features, which, however, were softened by a strong impression of the Mental temperament. His head was high and relatively long, rather narrow in the propensitive region, but quite full in the upper and anterior lateral region. He was a man of strong will, yet did not express his will in arrogant terms, or make any pretensions. His decision pervaded his action, his work, not his language. He was modest, retiring, sensitive, known well only by intimate friends, and really appreciated for himself by few. He was individual in his likings, no imitator, no conventionalist; an artist by profession, a lover of out-of-door nature, he sought his inspiration from the natural, and affected no mannerisms of foreign importation because they were popular or would pay. In his beliefs, if we read his portrait aright, he was quite independent, not caring to make other people's opinions or convictions his own without first examining the premises and learning if they were tenable from his point of view. He lived mostly in his art—that appeared a large domain to him, and his aspiring and sensitive nature saw no limits to its possibilities of excellence. Perfection was a very wide term to him, and quite among the unattainables.

He was born about the year 1823, at Greenfield, Saratoga Co., N. Y., and his death was the resultant of that dread malady, pneumonia, itself a sequel of a malarial attack. Early devoting himself to painting, he soon acquired prominence in the class of art which he made his specialty, becoming in 1854 a member of the National Academy of Design. In the prosecution of his studies he visited many parts of Europe as well as America. One who has once seen one of his Egyptian scenes is not likely to forget the charm of realism which pervades it; and this

is true of his early work. Indeed, one not a connoisseur of painting, having studied a picture of Mr. Gifford, is likely to recognize his peculiar treatment of the lights in any other picture of the same master without consulting the lower corner. His soft atmospheric effects are always a delight to the writer, and are especially appreciated in his highly esteemed views of Italian seaports.

During the late war he served as a volunteer in the Seventh Regiment of New York, and subsequently painted several scenes from the military life in

S. R. GIFFORD.

which he himself participated. A writer in the *Evening Post* gives an interesting account of Mr. Gifford's method of composing and painting a picture, as follows:

"Landscape painting he said was air-painting; and the object of the landscape painter was to reproduce the impression made upon him by beautiful natural scenery—and he emphasized the word 'beautiful.' When he saw anything that vividly impressed him, his habit was to make at once a small pencil sketch of it on a piece of paper not larger than an ordinary visiting card. On returning to New York after a summer trip, his pockets contained many such souvenirs, which subsequently were re-sketched in oil, on a larger scale, the canvas being, say, twelve inches by eight, and the time consumed not more than two hours. When one of these oil-studies was finished he was about ready to paint a picture from it. The preliminary experimenting—the processes of selection and rejection—had been accomplished; he waited only for a favorable day on which to begin—a day when he was in his best condition physically, and when he felt just like undertaking the task. When that day came he entered his studio soon after sunrise, locked the door, and worked until just before sunset, resting only a few minutes at noon for a frugal luncheon of bread and coffee. If any visitor called, there was no answer to his knocking. Neither friends nor potentates could gain admission to Gifford's studio on that first great day when for ten, eleven, or twelve consecutive hours he was getting his picture on canvas. His inspiration was at fever

heat; he did not criticise his work, he simply did it, as the *afflatus* moved him. No first day was long enough for the ardent painter, but very often at the end of it so much had been accomplished that even an artist friend stepping into his studio the next morning would often express his surprise that Gifford intended to touch the painting again; the rapidity and momentum had been Michael Angelesque.

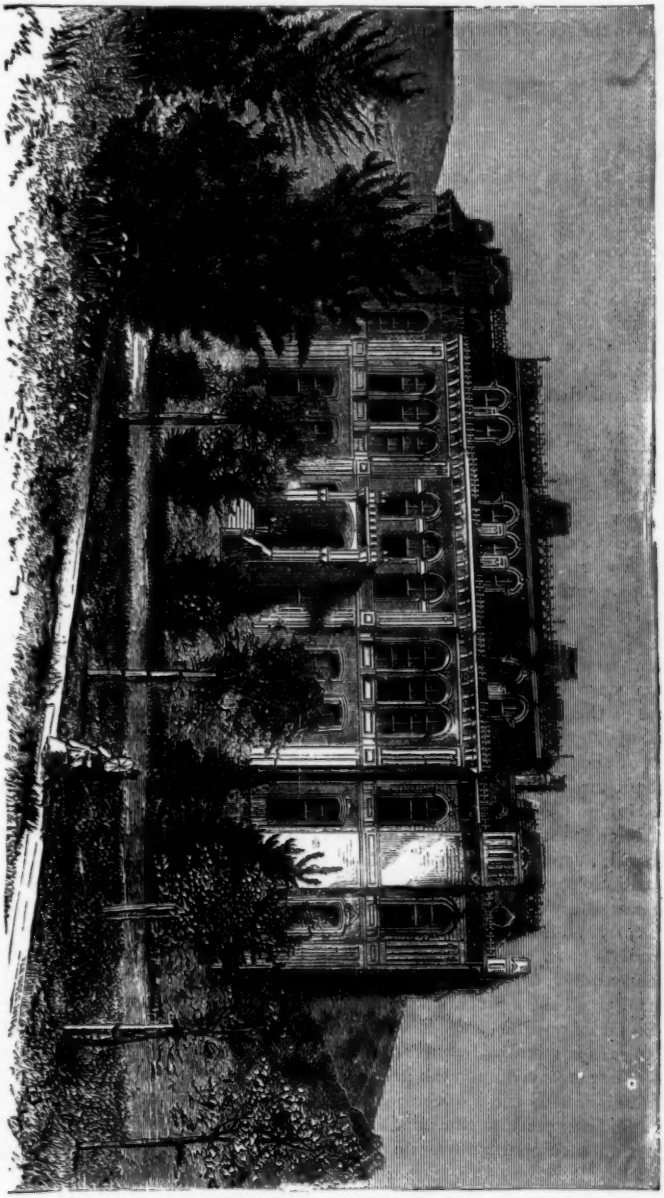
"On that initial day Gifford had begun, he said, by staining the disagreeable glaring white of his canvas with a solution of turpentine and burnt sienna. Next, with a piece of white chalk he had drawn an outline of the proposed picture. Next, he had 'set' his palette, squeezing from the tubes white, cadmium, vermillion, madder-lake, raw sienna, burnt sienna, caledonia brown and permanent blue, one after the other, along the upper rim, and putting just below them another row consisting of three or four tints of mixed white and cadmium, three or four tints of orange, and three or four tints of green, while along the lower edge were arranged several tints of blue. Since the color of the sky was to be the key-note of his picture, the first thing that he painted was the horizon—the color of the sky at the horizon, this color being the key-note of the color of the air. The business of criticism, correction, and completion belonged to other days than the first day, and Gifford always liked to keep his picture in his studio as long as possible—the Horatian seven years would not have been too long for him. Pointing to a canvas on the easel, he exclaimed: 'I thought that picture was done half a dozen times. Certainly it might have been called finished six months ago. I was working at it all day yesterday.' The last act in the regular process was the varnishing of the painting with boiled oil so many times, that a veil was left between the canvas and the spectator's eye, the farther away any object, the denser being the veil. This veil served the purpose of reflecting and refracting the light, the surface of the canvas ceasing to be opaque, and becoming transparent, so that the eye looked through it, upon and into the scene beyond. The really important matter, observed Mr. Gifford, is not the natural object itself, but the veil or medium through which we see it."

His last pictures were the "Matterhorn" and the "Parthenon," in all the charming glory of an Indian summer sky, a quality of coloring in which he had no equal among his contemporaries.

THE UNIVERSITY OF CALIFORNIA.

THERE lingers in the minds of people accustomed to the growth and culture of the Atlantic States, an impression that in far-off California matters social and educational are still primitive; that the rough ways and pursuits of mining districts must retard the intellectual development of the people there. This is largely erroneous, from the fact that the enterprise and growth of California are due to Eastern men chiefly, and when they removed to the Pacific slope, carried with them their Eastern education, and habits, and feelings. To be sure, they went as to an El Dorado to make their fortunes, but the great majority soon found that hard work of brain or hand was necessary to get the coveted "pile," and that method and patience were indispensable to success. So they settled in the new country and ere long found it to their best interests to give some attention to the arts of life which are higher than mere money-making. San Francisco, Sacramento, and a score of other towns sprang into existence and grew rapidly, and are growing rapidly still. And the population of the State, which forty years ago was a wilderness, barring its few old and widely-scattered Spanish towns, is now well on toward a million.

The intelligence of the main body of



VIEW OF THE UNIVERSITY OF CALIFORNIA—FRONT

the California people may be inferred from their interest in education. Schools are thick in the settled districts, and higher salaries are paid to teachers than anywhere else. For eleven years they have maintained an institution for the higher education of young men and young women, a view of the main building of the University, as it is called, being given in the illustration.

This University is located in Berkeley, Alameda county. It is a State institution, established by the Legislature, and intrusted to the care of a Board of Regents, which includes the Governor, the Lieutenant-Governor, the Speaker of the Assembly, the State Superintendent of Public Instruction, the President of the State Agricultural Society, the President of the Mechanics' Institute of San Francisco, the President of the University, and sixteen other Regents.

The University was instituted by a law which received the approval of the Governor, March 23, 1868. The instructions were commenced in Oakland in the autumn of 1869. The commencement exercises of 1873 were held at Berkeley, July 16th when the University was formally transferred to its permanent home. The site of the edifice, at Berkeley, is a domain of about two hundred acres, situated on the slopes of the Contra Costa hills, about five miles from Oakland, facing the Golden Gate. It is traversed by two water-courses, is much diversified in aspect, and adapted to a great variety of culture. A part of the site is reserved to illustrate the work of agriculture and horticulture, and is now under cultivation. The grounds have been thoroughly surveyed and studied, with reference to their adaptation to all the wants of the University. So far as possible, such students as desire to earn something by their manual labor will be employed upon the grounds.

For admission to the Colleges of Science, candidates must pass a satisfactory examination in higher arithmetic, in all its branches, including the extraction of square and cube roots, and the metric system of weights and measures; algebra, as far as the general theory of equations; geometry, the nine books of Davies' Legendre, or their equivalent from another author; English grammar; rhetoric; geography; and history of the United States. The examination is meant to be thorough and strict, but not so technical or exacting as to deter scholars from applying who have not had the best advantages of tuition.

The instruction and government of the students at Berkeley are intrusted to two Faculties, which have hitherto acted as one body—the Faculty of Science and the Faculty of Letters. The Medical and Law Faculties, in San Francisco, are distinct bodies. In accordance with the law, eight colleges have been organized, as will be seen by the following. These colleges or courses are designated in the Political Code as follows: 1 College of Letters; 2. College of Agriculture; 3. College of Mechanics; 4. College of Mining; 5. College of Engineering; 6. College of Chemistry; 7. College of Medicine; 8. College of Law.

The classics do not form a prominent feature in the curriculum, the practical, enterprising spirit of the California people appreciating more the needs of their State for minds trained in science, and the useful departments of every-day industry, than for those proficient in literary directions.

Tuition in the Colleges of Science and of Letters is free to residents of California. Students from other States pay a matriculation fee of $25, and a tuition fee of $50 per year. A small charge for chemicals is made in the chemical laboratory. Young ladies are received as well as young gentlemen. Board is obtained in private families at Oakland and Berkeley at from $20 to $30 per month (lodgings included). The hours of recitation are such that many students reside in Oakland and San Francisco, being able to attend by the railway facilities with San Francisco, which bring the University within one hour of that city.

THE BRANTFORD INDIANS IN ONTARIO.

THESE tribes of the "sons of the forest" have lived surrounded by civilization for nearly a century; which furnishes a good test of its effects upon them—an interesting and instructive experiment.

They are remnants of United States tribes who aided the British in their wars against us, and have since been cared for by the Government they served. They number over three thousand, and are increasing. They are made up from the "six nations," viz: Delawares, Tuscaroras, Oneidas, Onondagas, Cayugas, and Mohaws, and of Iroquois, and inhabit their Canadian Reservation some six to sixteen miles from Brantford, named after one of their powerful and manly chiefs, Brant, a tall, brawny, athletic brave, who fought us in the Revolution, and died in 1807. I have examined his grandchildren and great-grandchildren, but oh, how sadly degenerated! They are tall, but slim, retaining his Indian movement and physical outline, but only a moiety of his terrific power, and having more white blood than Indian, are decidedly "pale-faced."

I have just visited the Indian Academy, instituted and supported by an English missionary society, taught and managed by whites, containing about eighty scholars, conducted on the industrial plan, and saw some in their various classes, learning to spell, read, cipher, etc., and found some of them certainly as far below the white children of the superintendent as a baboon is below them in their organism and phrenology; and all any way pure-blooded having the Indian low forehead, conical crown, and great width at the ears. Their deficiency in Causality is marked, except in some of mixed blood, which embraced the great majority of them.

In them all frugality—that forepart of Acquisition, which saves up things—is very deficient, while its back part, which acquires, is uniformly large; and many of them are given to stealing, and are arraigned in court for it. They often steal to sell, yet never to *keep* or lay up. A squaw having two children, by the utmost of begging persistency got four dollars from the superintendent, and the next day bought for her children fifty cents worth of candy; though a winter was on her, and this her only resource for herself and them. Their financial knack seems to be to get the *least* possible good out of their money. Some improvident whites need to take warning from them. They have retiring Causality, and correspondingly evince little foresight, precalculation of effects, or strategy; their large *perceptives* giving them what talents they possess.

In arithmetic they seemed quite good, and fair in scholastic geography, but were dull, stupid readers and spellers; yet one of their mixed bloods carried off the prize in a class of seventy in last fall's competitive examination for admission to college; and three others, nearly half the number sent up, took lower prizes. The half-breeds learn quite easily, but the full-bloods slowly, especially at first, probably because they do not yet understand our language, which they learn slowly.

They speak through their teeth, with their mouths seemingly nearly closed, and very indistinctly; failing sadly in articulation and enunciation, and moving their lips but little, and hence are poorly understood.

I attended a court trial of one for assault and battery, originating in a drunken brawl of two good friends. One full-blooded squaw in attendance was muscular, and a woman of character. An Episcopal minister present had a twenty-three-inch head, a large, powerful body, every way well built and proportioned, and a brain well developed in most respects, yet lacking in frugality and only fair in Causality, but having very large perceptives, good Comparison, a very wide head, and great seeming energy and power of character. He was a Delaware; our little State being named from his

tribe, which once controlled that peninsular, and one of the most warlike and unsubduable of all, and hence scattered by Government among different reservations; yet the same robust, insubordinate, and sagacious tribe still. He was graduated at Toronto College with honor, and often preaches to whites acceptably. His Self-esteem, Secretiveness, and Caution were large, as were all his perceptives, whilst his Firmness, Destructiveness, Locality, and Form were very large, and his walk and bearing dignified, manly, and indicating conscious superiority.

All the young squaws have miserable female forms, flat chests, narrow hips, lean, scrawny persons, stooping postures, and scarcely a sign of that charm belonging to their age and sex. Yet a full-blooded old squaw I met was large, tall, brawny, vigorous, athletic, straight, tawny, paritoed, resolute, cheery — civilization had not spoiled her as a female.

Their superintendent says they utterly lack gratitude, and have no conception of disinterested kindness. What you give them they take as their *right*—perhaps because they feel as part payment of their manifold wrongs. He also said they were very hard and cruel on horses. But the minister said his tribe still remembered the Pennsylvania Dutch all these intervening generations, and showed marked attentions to any of them they saw, on account of past kindness received from them—a seeming contradiction.

I saw some eight-year-old girls darning stockings with much speed and skill, and their superintendent said they all used tools quite dexterously; besides strictly obeying any rules enjoined on them, showing me a melon patch within their reach wholly untouched. Yankee boys, would you do that?

Their case interested and instructed me very much. I hope it may the JOURNAL readers. Their teachers taught with ability, and with their superintendent merit thanks for their attentions to me.

O. S. FOWLER.

THE PHRENOLOGICAL COMMENTATOR—No 2.

ELIPHAZ, THE PSEUDOMANIAC.

"When one for booty friends betrays,
His children's *eyes shall fail.*"

—TAYLER LEWIS on Job xvii. 5.

THE Scripture is true to both Physiognomy and Phrenology. This fact to me is a Divine sanction of these sciences. It is only saying that Scripture is true to human nature. Job in its ancientness, like Genesis, affords the best field for finding those old and precious gems of speech that mark the traits of a man by the lines of his face or his physical actions. Job, to me, is demonstrated one of the oldest books of the Bible by the frequency of such therein; one of the first that impressed me being Job xvi. 8: "And thou hast filled me with *wrinkles.*" God honors such form of speech by using it to Cain, when asking him about the first recorded *frown.* "His countenance fell." Gen. iv. 5.

In my announcement of my discovery of the "Pseudomaniac, or born liar," I noted as the most marked sign, that the upper eyelid drooped, so closing up the eye in a measure. The word "fail," here is "close up." I also remarked that "flattery" was characteristic of many pseudomaniacs. Our accepted version translates this verse: "He that speaketh flattery to his friends, even the eyes of his children shall fail."

The same false spirit underlies both versions. He who betrays a man to himself by flattery does as great harm, or the same as he who betrays a man to others. Such habit, and it takes a habit to make a man such as Judas, becoming fixed, must have its effect upon the organs of Conscientiousness, Secretiveness, and Acquisitiveness, etc., and produce an impression upon offspring. T. S. Arthur makes a remark that illustrates this: "A

man who drives sharp bargains need not be surprised if his children are thieves."

This remark of Job was brought out against Eliphaz, from the old man's memory of the father of Eliphaz, I have no doubt. He was stung to it, so contrary to his usual courtesy; for he is the Old Testament gentleman, as Paul was of the New. Neither of them is exceeded by any except Christ in Gethsemane, begging pardon for the delay caused by healing the ear of Malchus. He was stung to such retort by the, to me, savagest sentence in Holy Writ: "God's comfortings, are they too small for thee?" Job xv. 11. (T. L.)

The A. V. says: "Is there any secret thing with thee?" as another translation of the second line. Lewis is right, I think, for two reasons: God Himself clears Job of any guilt, and it was not an idol's presence, as implied in the A. V., but God's absence that worried Job. Also the other four uses of the word in the Old Testament are best illustrated by Isaiah's use of this word "secret," "gently." "The waters of Shiloah that go *softly*."

These words were savage because *soft*. It's another mark, and one of the surest, that a born liar has a soft, creeping voice. The whole attitude of Eliphaz is displayed, especially in Job iv. 12-21:

"To me at times there steals a warning word;
Mine ear its whisper seems to catch,
In troubles from spectres of the night,
When falls on men the vision-seeing trance,
And fear has come, and trembling dread,
And made my every bone to thrill with awe,
'Tis then before me stirs a breathing form;
O'er all my flesh it makes the hair rise up.
It stands; no face distinct can I discern;
An outline is before mine eyes;
Deep silence! then a voice I hear:
Is mortal man more just than God?
Is boasting man more pure than he who made him?
In his own servants, lo, he trusteth not,
Even on his angels doth he charge defect.
Much more them who dwell in houses of clay,
With their foundations laid in dust,
And crumbled like the moth.
From morn till night they're stricken down,
Without regard they perish utterly.
Their cord of life, is it not torn away?
They die, still lacking wisdom."

His whole attitude, as displayed in this and the following chapter, is that of too many unsympathetic theologic souls attempting to administer comfort by quoting the works of creation and the mysteries of Providence to a *sore* heart. What has the Cosmos to do with a boil? But let such far-fetched abortion of comfort be administered to a man swallowed up in misery, and his whole horizon so narrow that a tear could roof it in, and be its best healer, by a man who is so egotistic as Eliphaz evidently is here, as to think his words a special revelation to him, and the uncomforted a rebellious fool, and in a soft voice, why, hell would be cool to such fury bred in his pent-up heart. If you want to get a vexatiously egotistic man, get one with a soft voice! If you ever chafe, fume, or sweat, and want to hit some one, or do something you know not what, as your "gauge rises," till every muscle hardens, and your every nerve seems on fire with smothered flame, then's the time! You can not hit him. You do not know on whom to waste your suppressed anger, and either tears or a wail will be your answer. Job's is in chapters sixteen and seventeen. I would blaspheme under such circumstances, if under no other. I would have to speak out, cry out, yell out my *unpointed* anger, or I would die.

Many a suffering soul who loudly and bitterly resents such a "vile person" (Daniel xi. 21), is greatly misconstrued, and all the credit is given to the one of softly-flowing speech and demure manner; because people like Eliphaz of old give the credit of Divinity to soft speech and manner. I say "Belial!" and say "Listen! Listen till your soul feels like flying out of your body because of devilishly serpentine inharmony! See the stealthily rising smile of complacency, as that soft voice stabs its victim! Reach out and feel the *hardness* of that 'hand of iron in a glove of velvet!'" I'd rather have all the boils of Job than such a comforter.

The ground reason of such repulsion natural to all sore or honest hearts lies in the hypocritical *putting on* of that di-

vinest attribute—Pity. For pity only in form, and not in fact, is cold charity and all unkindness. What are words, no matter how softly melting, if born on the Iceland of the lips? God himself has not creative power enough to dissemble pity. Such sympathy that a truly suffering heart will respond to, must be life, heart! No assumption of prerogative, no formal Scripture quotation, no matter in the claim, no tone in the utterance will suffice. Here is the mystery of misery, and here is the mystery of consolation. Christ *came down*. And when he had done all else, Christ died.

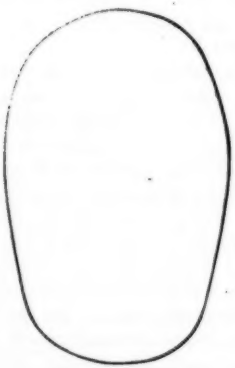
Sore-hearted Job was answered at last in a truly Divine fashion. But how? "*God* answered Job out of a *whirlwind!*" Like David of old, I cry: "Let me not fall into the hands of man" in such an hour, unless it be some *silent* one, who, because he feels how barren his own heart is of similar sorrow, is honest enough to be still; that in the common stillness the sufferer may see the storm from the desert, and from the "clouds which are the dust of his feet," hear God's voice commanding greater stillness, that Job and God may speak face to face! Here is the purpose of affliction and the secret of true consolation!

Here, too, lies the mystery of the brother—making discipline of sorrow. "As the sufferings of Christ abound in us, so does also our consolation abound by Christ." A suffering Christ, and in us suffering, is an absolute necessity; for he is humanity perfected by sufferings and glorified in consolation.

ALEX. M. DARLEY.

HOW THEY LOOK IN OUTLINE.

HEADS differ more or less in contour; no two selected off-hand in a large assembly will be found alike. The New York *Hat and Cap and Fur Trade Review* supplies us with some excellent illustrations of this fact from sources which just now have a commanding importance in popular esteem. The outlines numbered 1, 2, 3, 4, indicate the forms of as many different heads as taken by a hat conformator. Our readers at once perceive from this that the shape is that of the head at the line where the hat is fitted, and which in most persons passes around the cranium in a plane whose margin is about an inch and a quarter above the root of the nose, and three-quarters of an inch above the ear lobe.



No. 1.—GARFIELD.

No. 3.—ARTHUR.

The outline No. 1 is from the head of Mr. Garfield, the Republican candidate

for President. He wears a 7⅝ hat, and consequently his head is about 24 inches in circumference.

No. 2 is from the head of Gen. Hancock, and shows a very symmetrical contour, the backhead being well rounded and the side organs large. He wears a

No. 2.—HANCOCK.

7¼ hat, indicating a head nearly 23 inches in circumference.

No. 3 is from the head of Gen. C. A. Arthur, and shows a predominant development on one side, the right, the length being more than the average for heads of its size. As he wears a 7⅜ hat, its circumference is fully 23 inches.

No. 4 is from the head of the Democratic nominee for Vice-President. The size is 6⅞, or about 22 inches in circumference.

The lower or smaller end of the outlines represents the forehead, and the broadest part approximates the point where a

No 4.—ENGLISH.

horizontal line would pass through the opening of the ear. With these hints the phrenological reader can deduce some impressions of the intellectual and social characters of the gentlemen whom American politics have brought so conspicuously before the world.

CELIA THAXTER,

POET OF THE ISLES OF SHOALS.

AMONG our living women-poets Mrs. Thaxter takes good rank, succeeding in popular esteem, it may be said, to the place made vacant by the death of Phebe Cary. The portrait represents her as possessing a strong organization mentally, and marked elements of physical stamina. That long, rounded, and prominent lower jaw indicates descent from a robust, enduring, emphatic stock. The forehead is prominent in the perceptive region, showing in that respect and others, that she has inherited her intellect largely from her father. She is fond of observation, gathers facts for herself, and is better satisfied with a minute's examination of an object than with an hour's description of it in a book or from another. She is earnest and positive in opinion; speaks from conviction, and is ready to defend her beliefs. She possesses a very warm nature socially. Friends and home are to her very dear, and she can not school herself to the shifting, unsteady character of modern society. The loss of a friend is a crisis in her life, while to leave the old home is like rending some of the muscular fibers of her heart. Yet her mind has a decidedly practical tone, and we must mistake greatly in reading

the head, as it is here shown, if it be not true that she has no ambition to be esteemed as a lady of society, having little respect for fashion and the ways of mere convention.

Celia Laighton was born at Portsmouth, N. H., June 29, 1835. When but four or five years old, her father, being disappointed in certain political expectations, purchased Hog Island (now Appledore), and made it his residence, declaring he would never return to the mainland. Here the girl lived for ten years, and during all that time rarely saw other men besides her father and brothers, yet her thoughtful, observant nature found much employment amid the rocks and shoals, and the vistas of the sea which surrounded her. These rougher phases of nature furnished material for many a tender verse which later on found its thousand readers in circles far away from the Isles of Shoals.

At length the lonely rocks became interesting to the outer world, as a seaside resort for summer visitors, and among the first to go to Appledore was Mr. Thaxter, then a Portsmouth lawyer, who, being in delicate health, visited the island to recover his physical vigor, and built a little cottage. He saw the maiden of the Isle, was pleased with her appearance, and in process of time won her affections. Her father at first opposed a marriage, but at last reluctantly consented. Her first visit to the mainland was made on her wedding tour. Since then Mrs. Thaxter has passed her life sometimes on shore and sometimes at the Isles, where she has a modest and tasteful cottage in the vicinity of the well-known Appledore House, which is kept by her brothers. This cottage is reached by a well-worn path, often traversed by visitors to the island and guests of the hotel, nearly all of whom know the authoress by reputation, as the mixed crowds found at the popular water-resorts in the neighborhood of our large cities seldom make their appearance here, preferring to air their coarseness and lack of intelligence in some more congenial locality.

Celia Thaxter.

Mrs. Thaxter's poems and other writings bear so much upon the scenery and life of the Isles of Shoals, among which she has spent almost her whole mortal career, as far as it has extended, that she might well be named their poet and historiographer. Two volumes of hers published in Boston, are entitled "Poems," and "Among the Isles of Shoals," the latter being a collection of prose sketches. Of her poetry, perhaps "The Wreck of the Pocahontas," "Rock Weeds," "The Swallow," "Midsummer Midnight," would be among the favorite selections of those who are familiar with it. A late contribution to the *Atlantic Monthly* appears to us an excellent specimen of her capability, viz:

WEST WIND.

The barley bows from the west
  Before the delicate breeze,
That many a sail caressed
  As it swept the sapphire seas.

It has found the garden sweet,
  On the poppy's cup it weighs,
And the golden ears of wheat;
  And its dreamy touch it lays

On the heavy mignionette,
  And it steals its odors fine
On the pansies dewy yet—
  On the phloxes red as wine;

Where the honeysuckle bright
  Storms the sunny porch with flowers,
Like a tempest of delight
  Shaking fragrance down in showers.

It touches with airy grace
  Each clustering perfumed spray,
Clasps all in a light embrace,
  And silently wanders away.

Come forth in the air divine,
  Thou dearest, my crown of bliss!
Give that flower-sweet cheek of thine
  To the morning breeze to kiss.

Add but thy perfect presence
  To gladden my happy eyes,
And I would not change earth's morning
  For the dawn of paradise.

KEEP A JOURNAL.

AN English periodical gives its readers some good hints on how to conduct a diary or journal. It begins by saying:

"Autumn is as good a time as any to begin to keep a journal, and as we are now near the close of the year it is appropriate that these hints should be repeated. Too many people, old as well as young, have the idea that it is a hard and unprofitable task to keep a journal, and especially is this the case with those who have begun, but soon gave up the experiment. They think it a waste of time, and that no good results from it. But that depends upon the kind of journal that you keep. Everybody has heard of the boy who thought he would try to keep a diary. He bought a book, and wrote in it, for the first day, 'Decided to keep a journal.' The next day he wrote, 'Got up, washed, and went to bed.' The day after, he wrote the same thing, and no wonder that at the end of a week he wrote, 'Decided not to keep a journal,' and gave up the experiment. It is such attempts as this, by persons who have no idea of what a journal is, or how to keep it, that discourage others from beginning. But it is not hard to keep a journal if you begin in the right way, and will use a little perseverance and patience. The time spent in writing in a journal is not wasted, by any means. It may be the best employed hour of any in the day, and a well-kept journal is a source of pleasure and advantage which more than repays the writer for the time and trouble spent upon it.

"The first thing to do in beginning a journal is to resolve to stick to it. Don't begin, and let the poor journal die in a week. A journal, or diary, should be written in *every day*, if possible. Now, don't be frightened at this, for you do a great many things every day, and this is not a very awful condition. The time spent may be longer or shorter, according to the matter to be written up; but try and write, at least a little, every day. '*Nulla dies sine linea*'—no day without a line—is a good motto. It is a great

deal easier to write a little every day than to write up several days in one.

"Do not get for a journal a book with the dates already printed in it. That kind will do very well for a merchant's note-book, but not for the young man or woman who wants to keep a live, cheerful account of a happy and pleasant life. Sometimes you will have a picnic or excursion to write about, and will want to fill more space than the printed page allows. Buy a substantially bound blank-book, made of good paper; write your name and address plainly on the fly-leaf, and if you choose, paste a calendar inside the cover. Set down the date at the top of the first page, thus: 'Tuesday, October 1, 1879.' Then begin the record of the day, endeavoring, as far as possible, to mention the events in the correct order of time — morning, afternoon, and evening. When this is done, write in the middle of the page, 'Wednesday, October 2,' and you are ready for the record of the next day. Set down the year at the top of each page.

"But what are you to write about? First, the weather. Don't forget this. Write, 'Cold and windy,' or 'Warm and bright,' as the case may be. It takes but a moment, and in a few years you will have a complete record of the weather, which will be found not only curious, but useful.

"Then put down the letters you have received or written, and, if you wish, any money paid or received. The day of beginning or leaving school; the studies you pursue; visits from or to your friends; picnics or sleigh-rides; the books you have read; and all such items of interest should be noted. Write anything you want to remember. After trying this plan a short time you will be surprised at the many things constantly occurring which you used to overlook, but which now form pleasant paragraphs in your book. But don't try to write something when there is nothing to write. If there is only a line to be written, write that, and begin again next day.

"Do not set down about people anything you would not wish them to see. It is not likely that any one will ever see your writing, but it is possible, so always be careful about what you write. The Chinese say of a spoken word, that once let fall, it can not be brought back by a chariot and six horses. Much more is this true of written words, and once out of your possession, there is no telling where they will go, or who will see them.

"The best time to write in a journal is in the evening. Keep the book in your table drawer, or on your desk, and after supper, when the lamps are lighted, sit down and write your plain account of the day. Don't try to write an able and eloquent article, but simply give a statement of what you have seen or done during the day. For the first week or two after beginning a journal, the novelty of the thing will keep up your interest, and you will be anxious for the time to come when you can write your journal. But, after a while, it becomes tedious. Then is the time when you must persevere. Write something every day, and before long you will find that you are becoming so accustomed to it that you would not willingly forego it. After that the way is plain, and the longer you live the more valuable and indispensable your journal will become.

"But some practical young person asks: 'What is the good of a journal?' There is very much. In the first place, it teaches habits of order and regularity. The boy or girl who every evening arranges the proceedings of the day in systematic order, and regularly writes them out, is not likely to be careless in other matters. It helps the memory. A person who keeps a journal naturally tries during the day to remember things he sees until he can write them down. Then the act of writing helps to still further fix the facts in his memory. The journal is a first-class teacher of penmanship. All boys and girls should take pride in having the pages of their journals as neat and handsome as possible. Compare one day's writing with that of the one before, and try to improve every day.

Keeping a journal cultivates habits of observation, correct and concise expression, and gives capital practice in composition, spelling, punctuation, and all the little things which go to make up a good letter-writer. So one who keeps a journal is all the while learning to be a better penman, and a better composer, with the advantage of writing original, historical, and descriptive articles, instead of copying the printed letters and sentences of a writing-book.

"But, best of all, a well-kept journal furnishes a continuous and complete family history, which is always interesting and often very useful. It is sometimes very convenient to have a daily record of the year, and the young journalist will often have occasion to refer to his account of things gone by. Perhaps some evening when the family are sitting and talking together some one will ask, 'What kind of weather did we have last winter?' or, 'When was the picnic you were speaking of?' and the journal is referred to. A marriage, a death, a birth, an accident, a house-burning, a contract, a visit, or some fact which may, by being preserved, save one's life or reputation, or money, will make the journal very useful. But the pleasure of keeping a journal is itself no small reward. It is pleasant to exercise the faculty of writing history, and to think that you are taking the first step toward writing newspapers and books. The writer can practice on different kinds of style, and can make his journal a record, not only of events, but of his own progress as a writer and thinker."

CONFUCIUS.

THIRTY years ago, and less, we seemed to have as little concern about Confucius and his teachings as we now have about the cogitations of the man in the moon. China was then a very far-off country, we had little or no communication with its people, and there were not, perhaps, fifty natives of the Flowery Kingdom in the entire United States. Within the last twenty-five or thirty years, however, all this has greatly changed. Our present intimate treaty relations with that country, our constant communication with it, and especially the tide of immigration from that vast sea of humanity to our shores, make it important for us to understand better this new element that is being absorbed into our complex population.

Confucius is the great moral teacher of the Chinese. He was the son of Shuh-leang Heih. His father was a gallant soldier, of whose prowess and strength wonderful stories are told. At the time of Confucius' birth, Heih was well advanced in years; his mother was quite a young woman, and Confucius was her only child. Her name was Ching-tsae. Confucius was born in the year 551 B.C., in the district of Tsow, of which his father was governor. The eternal fitness of things required that such a child should be ushered into the world with suitable auguries; hence there were wonderful portents accompanying his nativity. Among other things, equally startling, his mother dreamed, shortly before his birth, that she should bring forth a son in a hollow mulberry tree. She inquired of her husband if he knew of any hollow mulberry tree; he replied that there was a dry cave in the south hill that was called by that name. When she told him her dream, he was much surprised, but set to work to have the place properly prepared for her reception. On the night when the child was born, two dragons kept guard, one at each side of the cave; two fairy ladies appeared in the air and poured forth delicious odors; and when the child was born, a spring of water burst up from the floor of the cave, which immediately dried up again as soon as the child had been washed.

The subsequent life of one whose coming had been marked by such prodigies could only be expected to be something extraordinary. At nineteen he married;

and the next year he entered the public service, first as keeper of the stores of grain, and the next year as superintendent of the public lands. As a public officer he set an example worthy of imitation by all subsequent office-holders. As keeper of the public stores, he said: "My calculations must all be right—that is all I have to care about;" and in regard to his duties as superintendent of the public lands he said: "The oxen and sheep must be fat and strong and superior—that is all I have to care about." In his twenty-second year, he began his labors as a teacher. He cared nothing about the fees that were paid him, but he required a proper earnestness in his pupils. If they were wanting in this, he took but little interest in them. "When I have presented one corner of a subject to any one," he said, "and he can not from it learn the other three, I do not repeat my lesson." But while a teacher, he continued his character as a student. In the year 517 B.C., when he was about thirty-five years old, he visited the city of Lo, in order to converse with a distinguished teacher, Laou Tau. Here, observing a picture of the Duke of Chow, with his infant nephew, the king, upon his knees, giving audience to the princes, Confucius remarked to his followers: "Here you see how Chow became so great. As we use a glass to examine the forms of things, so must we study antiquity in order to understand the present"—a speech that would indicate the knowledge and use of magnifying-glasses 2,000 years before the time of Galileo.

Confucius did not long remain at Lo; he soon returned to his former residence at Loo, where he continued his work of teaching. His fame increased, so that his disciples amounted to 3,000. In the midst of the troubles of those unsettled times, his native district fell into confusion, and the philosopher repaired to the neighboring State of Ts'e. On the way he saw a woman weeping bitterly over a grave by the roadside. He inquired the cause of her grief. "You weep as if you had experienced sorrow upon sorrow." The woman replied: "It is so. My husband's father was killed here by a tiger, and my husband also; and now my son has met the same fate." Confucius asked why she did not leave such a place, and she answered: "There is here no oppressive government." He then turned to his disciples and said: "My children, remember this. Oppressive government is fiercer than a tiger." His ideas of a proper government are eloquently expressed in his memorable saying: "Good government obtains, when those who are near are made happy, and those who are far off are attracted;" and again in the remark, that the art of government lies in an economical use of the revenues. With the restoration of tranquillity, the philosopher returned to his home.

In the year 500 B.C., Confucius again entered public life. In that year he was made chief magistrate of the town of Chung-too. His administration of this office was so admirable, that he was soon appointed Assistant Superintendent of Works, and shortly afterward, again promoted to be Minister of Crime. In all these various capacities, Confucius distinguished himself by the wisdom, vigor, and success of his public efforts. Under his administration, it is said that "dishonesty and dissoluteness were ashamed, and hid their heads. Loyalty and good faith became the characteristics of the men, and chastity and docility those of the women." But the neighboring States became jealous of the prosperity of Loo, and the Duke of Ts'e contrived a scheme by which Confucius was separated from his master, and his influence over him was lost. The philosopher seeing this, concluded that it was time for him to withdraw. He therefore resigned his post, and set forth on his travels. For thirteen years he continued to wander through the various States of China, accompanied by a number of his disciples. Many anecdotes are told of him during these years of wandering. At P'oo, having engaged that he would not proceed to Wei, with which State P'oo was then at war, he went, nevertheless. When asked whether it was right to violate his

oath, he replied: "It was a forced oath. The spirits do not hear such." On one of his journeys the provisions of himself and his companions were exhausted, nor could they obtain more. They endured the greatest distress for several days, but during the whole time Confucius maintained his equanimity, and consoled himself with poetry and music. When one of his disciples said to him, "Must the superior man endure in this way?" he replied: "The superior man may indeed have to endure want, but the mean man, when he is in want, gives way to unbridled license." Again, when he heard that the chief of Ts'oo, to whom he was a stranger, was at a loss what to think of him, he said: "Why did you not say to him—He is simply a man who in his eager pursuit of knowledge forgets his food; who in the joy of its attainment forgets his sorrows; and who does not perceive that old age is coming on?" In the year 483 B.C., Ke K'ang, the new chief of Loo, invited him to return to his native district.

Confucius now returned an old man to his former home. His life had not been a happy one. The life of no great reformer is happy. Upon his mind and heart rested the burden of the needs of humanity. In addition to the other evils and cares of life, old age, though he may have shut his eyes to its approaches, crept on apace, and his friends also began to fall by his side. His beloved disciple, Yen Hwvy, died first, then his own son Le, and finally his stout follower, Tsze-loo. Confucius cried out in his anguish: "Alas! Heaven is destroying me! Heaven is destroying me!" But he did not long survive. He died B.C. 478.

Such is an outline of the life of Confucius. Those who had slighted him during his life-time, canonized him after he was dead. It is the old story over again. The fathers kill the prophets, and the sons build their sepulchers. Temples were erected to his memory, and a degree of homage approaching to actual worship is paid at his shrines. For centuries he has been the potent spell over China. His influence has prevailed everywhere. The Confucian writings form the body of all learning in China. He has superseded all other teachers.

This influence has been greatly for good, and yet it has not been unmixed with evil. His teaching was not irreligious according to the Chinese standard, but, as Dr. Legge * has remarked, it was unreligious. He confined himself to the earth, and to man's duties here. He was not a teacher of religion. The name of the personal god of the Chinese does not once occur in all his writings. This is itself a remarkable fact. He did not profess to know anything about the hereafter, and he did not attempt to teach what he did not know. He did not profess to know anything about the condition of those who had passed through the gates of death, and he did not trouble himself much about it. On one occasion, when speaking of the duty of sacrificing to the dead, one of his disciples asked him whether or not the dead had knowledge of this service on the part of the living. Confucius replied: "If I were to say that the dead have such knowledge, I am afraid that filial sons and dutiful grandsons would injure their substance in paying the last offices to the departed; and if I were to say that the dead have not such knowledge, I am afraid lest unfilial sons should leave their parents unburied. You need not wish to know whether the dead have knowledge or not. There is no present urgency about the point. Hereafter you will know it for yourself."

Dr. Legge says this was not the teaching proper to a sage. We think differently. For a Christian minister, in the light of revelation, to thus hedge upon an important doctrine would be blameworthy; but to our mind, in the case of Confucius, it was eminently the proper thing to do. Why depart from a pious custom established from old time, on a question as to whether or not the dead could be conscious of the act of sacrifice? Why worry and conjecture over a

* Dr. Legge's learned work on the life and teachings of Confucius, I have made the groundwork of this essay.

problem that is for the present involved in hopeless obscurity, but which will in its proper time be cleared up to the satisfaction of all? Again, on being asked, What is wisdom? he answered: "To give one's self earnestly to the duties due to men, and, while respecting spiritual beings, to keep aloof from them, may be called wisdom."

In these answers we find the key to his character. He was a moralist, not a spiritual guide; he was a practical man, not a visionary. It was to point out their relative duties to each other as members of the same society, as citizens of the same country, that he labored. He believed in the wisdom of the ancients. He attempted no novelties. He only endeavored to expound and enforce the ordinances and teachings that were furnished by the sages who had preceded him. He did not desire any departure from old customs. "Follow the seasons of Hea," said he. "Ride in the State carriages of Yin. Wear the ceremonial cap of Chow. Let the music be the Shaou with its pantomimes. Banish the songs of Ch'ing, and keep far from specious talkers."

But there are two points in particular in which the influence of his teachings have not been for good. The first is in inculcating insincerity of character. We have already seen that in his conduct at P'oo, when he went to Wei, after he had taken an oath not to do so, and his answer in justification of his act. Such teaching has borne its legitimate fruit. The Chinese are proverbially tricky, unreliable, and deceitful. The whole nation has been infected with this poisonous leaven, and has become corrupt.

Again, in the Le Ke, or "Record of Rites," which has been attributed to Confucius, or to him mainly; it reads: "With the slayer of his father, a man may not live under the same heaven; against the slayer of his brother, a man must never have to go home to fetch a weapon; with the slayer of his friend, a man may not live in the same State." Whether or not Confucius laid down this statement of the law of private vengeance, he did unquestionably enforce it and enlarge upon it in his teachings. This evil principle, as in the other case, has brought forth abundantly after its kind. It has made the Chinaman—who is naturally quiet, submissive, and peaceable—in the redress of his private grievances, vindictive, watchful, and unsparing.

These, however, are but spots on the sun. While Confucius thus falls far below the standard of our Christian ethics, we must remember that he was a heathen in a heathen land, with no lamp for his feet except the dim light of nature and the intuitions of his own conscience. We must also remember that five hundred years before Christ taught on the hill-slopes of Judea, Confucius amid the rice-fields of China had uttered such sayings as these:

"To see what is right and not to do it, is want of courage." "What you do not want done to yourself do not do to others." "The wise are free from perplexities; the virtuous from anxiety; and the bold from fear." "If a superior man abandon virtue, how can he fulfill the requirements of that name?" "If the will be set on virtue, there will be no practice of wickedness." "A man should say: I am not concerned that I have no place; I am concerned how I may fit myself for one. I am not concerned that I am not known; I seek to be worthy to be known." "When a country is well governed, poverty and a mean condition are things to be ashamed of. When a country is ill governed, riches and honor are things to be ashamed of."

Such is a summary of the life and teachings of Confucius. He is, as we have said, the great object of veneration to a population that numbers one-third of the human race. He becomes an object of some interest to us, since tens of thousands of his countrymen have found a lodgment with us. The Chinese question has assumed proportions sufficiently vast to engage the attention of our national councils, and the end is not yet. These men are already among us in large numbers, and others will no doubt come until they will have spread themselves through our population over the whole land. It is well to know something of their history, their principles and their views.

THOMAS J. CHAPMAN, A.M.

HEALTH IN THE PULPIT.

IN a "Familiar Talk" to the Theological students at Andover Seminary, the Rev. J. J. Munger gives some excellent advice with regard to the habits which should form part of a young minister's every-day life, as follows:

"1. The first and nearly most important thing I could suggest to the young minister is that *he should secure and preserve his health*. When Mr. Carlyle made his address before the students of Edinburgh University, he closed his wise words by a plea for health, saying: 'There is no kind of achievement you could make in the world that is equal to perfect health.' He had not in mind the personal comfort of health; but the basis it affords of doing well any sort of work. And not only is it the basis of all achievement, but it *enters into* the achievement as a quality. Where is this mysterious relation between body and mind that physical condition becomes mental characteristic? Man is one—or, rather, is now linked into such indivisible oneness that you can not say: Here the body ends and the mind begins. This is mental, that is spiritual. A quality runs throughout the whole gamut of our being. If a man is sound and healthy in his body, if he is weak or sickly, he will be sound or sick from his bones to his aspirations. You can not measure the degree and persistence with which the bodily tone asserts itself throughout the whole range of one's work. We talk about the mind triumphing over the body; but it seldom triumphs to such a degree that a sick body yields sound mind-work. It will show the marks of the struggle; and, if it is strong and cheery, it will be a cheer and strength wrested out of weakness, not that which bubbles up from health and vigor. This is a matter of great importance—whether we preach out of thorough, ingrained healthiness, or preach *as though we were well, not being so*. We can not triumph over Nature. Her color will strike through our cheery and energetic speech, with inevitable suggestion of pain or weakness. And red vitalized blood will tinge the utmost thoughts of the mind. There is no doubt whatever (as gathered from his works) but Shakspeare was a man of most robust health; and Mr. Carlyle well knows that his life-long dyspepsia is a considerable ingredient of his thought.

"Now, there is no man upon whom there rests so supreme a necessity of health as upon the preacher. Not because his work demands endurance, but because the people need a ministration that is charged with vitality. When you come here, you are required to bring credentials of piety from your pastor or others. It is quite as necessary that you should bring testimonials from your physician that you have, at least, average physical

vitality and good bodily habits conservative of health, and are in that general condition that may be called *physical piety*, under the Calvinistic dogma of *perseverance*, and not liable to any Arminian lapsing into flabbiness and inertia. And I most sincerely think that a license to preach should cover the fitness of the body as well as of the mind, and that, after the candidate has rehearsed his religious experience, he should offer some test of the strength of his nerves, the degree of his vitality and physical force, and give some account of his habits as to sleep, exercise, ablution, and food. Immeasurably more than the physician or lawyer does the minister need bodily vigor. I do not mean as a basis for enduring work, but as sending its quality into the work. A physician who is weak may diagnosticate truly, but the weak minister will not preach strong sermons; the languid, lifeless preacher will not awaken healthy sentiments or stir to action.

"I but call your attention to the subject as one of immense importance. I would not have you start in life with an old man's sensitive care or with any self-coddling, as though health were the supreme end. There is nothing much worse than this. But I would have you realize that, along with learning and piety, *health* is an equally important factor of success.

"Others, I have no doubt, have exhorted you on the subject of your spiritual and mental habits, but let me exhort you to vow before God that it shall be a rule of your life to sleep eight hours out of the twenty-four, two hours being before midnight; that you will spend two hours every day in the open air; that you will write mornings rather than evenings; and that you will abstain from pastry and all other well-known dietetic abominations, and that you will rest when your energies sensibly begin to flag. To observe these few rules is not unmanly. Observing them, one may cease to think of health."

MICROSCOPIC ANALYSIS OF MILK.

THE test by microscopy is one of the best for the detection of adulterated or deteriorated food, and is becoming more commonly employed as its definite showings are more appreciated. In the examination of milk the microscope renders deception impossible. The lactometer may fail, like the eye and even chemistry, to show promptly the extent of impurity or adulteration, but the microscope at once reveals unfitness or fraudulent manipulation.

Prof. Piper, of Chicago, has made careful studies of healthy and diseased milk, and drawn its appearance under the microscope in several conditions. The four views herewith given, are reproductions of four published by him.

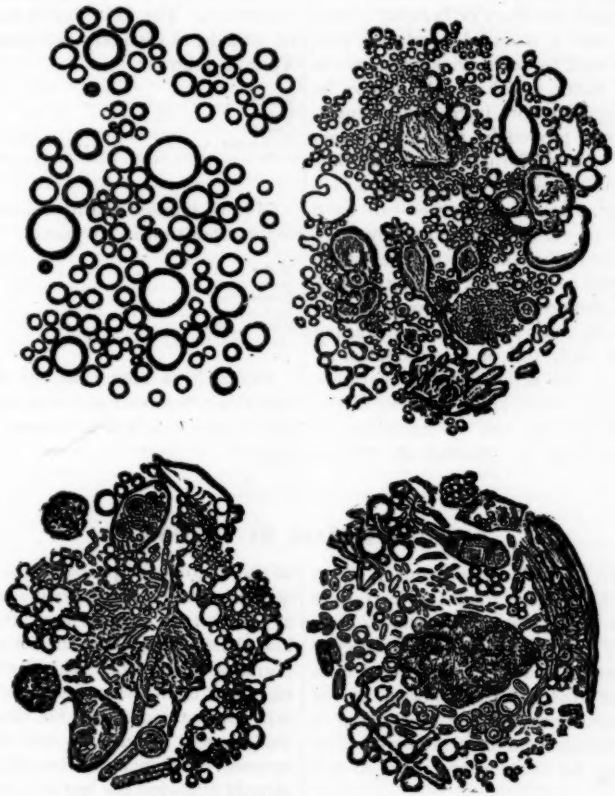
When the milk is fresh and healthful, it appears as in the upper left-hand group of circle-like forms, made up of innumerable albuminous and fatty globules of various sizes floating in a clear or slightly yellowish fluid. The globules as seen in the engraving are magnified 340 diameters.

In bad or diseased milk, in some cases, this fluid is quite blue in color. The regular rounded form and freedom of movement of the globules in the fluid seem to be such constant factors in good milk, as to justify the statement of many authorities that any departure from this condition indicates disease. There is to be observed in that which is not sticky or ropy, on the microscopic slide, a constant motion, called the Brownian motion, the globules dancing as if instinct with life. This motion is always present in healthy milk so long as it remains fluid on the slide. In diseased milk this motion of the globules ceases at once, or fails even to be present, when first placed on the slide. The corpuscles aggregate and stick together in groups, or seem to be glued to the slide.

The other three engravings show the

appearance of diseased milk. That alongside of the first mentioned is a sample of milk taken from a milk wagon. There may be seen some regular globules which are doubtless the true spheres found in pure milk, but there is also a mass of foreign matter which doubtless consists of fungus or animal germs and portions of diseased tissue from the udder of the cow. This appearance was gained quite soon after the milk was drawn. After it was allowed to stand overnight, it presented the appearance in the lower left-hand group of forms. Here are seen bacteria, fungi, and vibriones, which Prof. Tyndall describes as "long, eel-like organisms, tossing the globules aside, and wriggling more or less rapidly across the field of the microscope." These organisms are the agents of all putrefaction.

The fourth diagram represents another sample of diseased milk. It was taken from the food of a sick child, and is a sample of milk supplied by cows fed on distillery swill. The reader bearing in mind what was said in the article on Beer and Bread, in the October Number of the PHRENOLOGICAL JOURNAL concerning the method of sprouting grain in vogue among brewers, can not wonder that cows fed on the fermenting half putrid malt should yield a corrupt form of milk.



APPEARANCE OF HEALTHY AND DISEASED MILK UNDER THE MICROSCOPE.

The vicious condition of the milk which is furnished city people from swill-fed cows may be produced by the introduction of ferments, which enter the blood of the animal from the unhealthy food, and it is also the result of the diseased condition of the udder which accompanies such improper diet. The danger of partaking of poison in their milk, therefore, always overhangs people who use milk from dairies fed upon distillery or brewery refuse. There is also a diseased condition produced in milk by cows drinking stagnant and foul water, which should always be guarded against, both in city and country. It has been proved by the experiments of Prof. Law, of Cornell University, that cows drinking water from impure pools—water containing fungus germs—will have these low vegetable growths conveyed into the circulation, and from the blood transmitted to the milk; that, although the milk did not at first show any signs of the fungi, yet, on standing, it turned out to be bad, and on microscopical investigation, the same fungus vegetation found in the water, appeared also in the milk. The cows, too, on examination, were found to be affected in health, though to a casual observer they might not appear ailing. The microscopical examination of milk from swill-fed cows has shown not only fungi, but particles of pus, and there can be no doubt that serious troubles have come from partaking of such milk.

The chemical composition of milk made from slop-fed cows as compared with the composition of pure milk, shows marked variations. The following is an analysis of milk from distillery-fed cows of New York, as follows:

Water	93.0
Butter	1.8
Caseine	3.4
Milk sugar	0.7
Salts	0.1
	100

Milk of average quality has the following composition in 100 parts:

Water	87.40
Butter	3.43
Caseine	3.12
Milk sugar	5.12
Mineral matter	0.93
	100.00

Hence it is seen that the swill-milk contains not only six per cent. more water, but is very deficient in butter and milk sugar.

CURING DISEASE BY FASTING.

DR. TANNER'S experiment in living without solid food for forty days is still a topic of popular discussion. The *Adams Transcript* relates an analogous experiment or two in long fasting by a citizen of North Adams, Mass. In the latter case, however, the object was to cure a disease, and not merely to show how long he could starve himself and live.

To quote the *Transcript*:

"Apropos to the experiment of Dr. Tanner, who in New York attempted to live forty days without food of any kind, the experience of Mr. John F. Arnold, of this town, may be interesting. Mr. Arnold, as is generally known, is a radical upon the subject of health and medicine, and advocates theories which to the majority of people appear dangerous and unwise. His story is in substance as follows: In 1839 he was very ill, and his physicians gave him little hope of permanent recovery. This fact led him to study medicine and the care of himself. About that time Dr. Graham, the well-known founder of the Grahamite system, came here to lecture, and Mr. Arnold attended the lectures and became a thorough convert. He afterward studied books supporting Dr. Graham's views, and from that day to this he has been a consistent believer in the doctor's theory. In 1847 Mr. Arnold studied the books of Dr. Jennings, of Oberlin College, and embraced his theory that disease was not an enemy of the human system, but was simply nature's method of repair, and

was right under the circumstances. The first opportunity to put his theory to practical test was in 1865, when, after a season of hard work, and being thoroughly exhausted, he was prostrated with bilious fever. Dr. Hawkes was summoned, and said that escape from the usual twenty-one days' sickness was impossible. The doctor called regularly and left his medicines, but Mr. Arnold did not take a drop of them, and allowed no nourishment to pass his lips, except pure water, for twenty-four days. For over three weeks he existed without a particle of food, and then he began to eat and regain his strength rapidly, increasing fifteen pounds in eighteen days. Not until he was entirely cured did he reveal his course to the doctor.

"Again, in 1872, after the fright and exhaustion caused by the burning of the Fifth Avenue Hotel in New York, where he was stopping at the time, Mr. Arnold was again prostrated with bilious fever. This time he called Dr. Lawrence, and told him that he intended to fast again during the three weeks of the illness, and the doctor consented to watch the progress of the case. The result was the same as before, Mr. Arnold coming out of the fever stronger than ever, having taken nothing into his system for twenty-four days except water. Mr. Arnold's theory is that Nature, if left to herself, if the system be not broken down by previous excesses, will 'repair the machine' better than if hindered by drugs and medicines and other unnatural things. Mr. Arnold believes that Dr. Tanner will complete his seemingly impossible task, as the doctor began the experiment in perfect health, while in both instances Mr. Arnold was exhausted to begin with."

CHEERFULNESS AS A MEANS OF HEALTH.

"THE proper regulation of the passions of the mind is of the utmost consequence toward the establishment and continuance of health. He who would enjoy perfect health and long life, should cultivate a perpetual cheerfulness, and maintain a fixed resolution to be pleased with whatever may befall him; this satisfaction and content is within the reach of every one. But he who is constantly repining and fretting for the possession of some visionary bliss, or toiling in the ceaseless pursuit of that which he thinks he has a right to expect the possession of, must not wonder if his health shall be impaired by the delusive chase. Persons who indulge this wayward disposition, easily irritable, and attentive only to that which seems faulty and disagreeable to others, if everything they could wish for were at their command, would make shift to be as peevish and uneasy as if they had real cause for discontent. Subordination is indispensable, and the foot may as well refuse to perform its functions because it is not the head, as man to become dissatisfied with his state. Every one has an undoubted right to meliorate his condition if he can, but such attempts are by no means inconsistent with the indulgence of continual good humor, with suffering the mind to dwell only on pleasing images, and with acquiescence under disappointment. Nature requires nothing but food and raiment, and some time ago a wise and good man had learned to be quite contented with them. Let us add, as another means, tenderness to all the animal creation. This softens the mind and endues it with an aptitude for the reception of pleasurable sensations, and of the finest feelings of the human heart. It is in the power of every one to exert his efforts to contribute to the pleasure and felicity of all with whom he is connected, even in the minutest incidents. Seek by all means the happiness of others, and you will find your own in the way.

"Let the same procedure be recommended to our fair countrywomen, with this additional argument, that to be *good* is to be handsome as well as healthy;

nothing improves the beauty like cheerfulness, good-nature, and a desire to please. Health, virtue, and beauty are too strongly attached to each other to be separated for any length of time; they are the fondest friends, and like other friends, by their amicable provisions, mutually improve each other. Health adorns the countenance with attractive sweetness; virtue animates every feature; beauty gives them the highest finishing, and all unite in filling the eyes with enchanting and irresistible charms."

The foregoing selection seems to me worthy a place in the columns of THE PHRENOLOGICAL JOURNAL. Every young man and young woman in our land would be the better by being a subscriber to your valuable journal. I send you a few seeds of the "Umbrella China" tree. It is quite a different growth from the common tree, and takes its name from its resemblance to an open umbrella. If any of the JOURNAL readers desire a few of the seeds, and will send me their post-office address and stamps to pay for mailing, I will send a few of the seeds to each applicant.

ALEXANDER KING,

SAN PEDRO, *Houston Co., Texas.*

NATURE'S DRESSING FOR WOUNDS.

A LESSON FROM A TOAD.

A FEW years since, while standing in the shade during the heat of the day, a toad hopped along at my feet and attracted my attention from having what appeared to be a very large fore-arm. Stooping down, I found that from the shoulder to the elbow-joint the fore-leg was encased in earth, which was very smooth, dry, and hard. Inquisitiveness being well developed, I had, of course, a natural inclination to see what was inside, so holding "toady," with a piece of stick I broke the crust of hardened mud, and found, to my surprise, a large flesh wound extending from the shoulder to the elbow, half of the muscle being bruised and raw. From the smoothness of the work, I judged the dressing had been made from dry earth and the spittle of the toad, as it would be seemingly impossible for it to handle mud and apply it in such a manner. I thought nothing more of the matter for a year or more, until one night one of my children retired with a very sore toe from some unknown cause, and about midnight was wild and restless with pain. I arose and opened the ulcerated part, and afforded him relief for the time being; but the pain returned, and by the next hour he was as restless as ever. After trying to give relief in various ways I thought of the toad, and, taking an old stocking, I put some mud, made of clay and water, into the toe part, and drew it on the child's foot. In ten minutes he was asleep, and slept well the remainder of the night, and in the morning the toe appeared nearly well. I have found that a mixture of earth and spittle is preferable, and I have used it since upon every occasion where remedies are necessary for the relief of ulcers or healing flesh wounds, and prefer it to any ointment or liniment that I have ever seen or made during many years' experience as a druggist. Furthermore, I believe that every movement that Christ made while here on earth was for the purpose of "leaving us an example," and when he anointed the eyes of the blind with clay and spittle he was using one of Nature's remedies that is always at hand to the poorest person living. If we were to follow his teachings in all things, we would be far more nearly perfect here, and better prepared for the world to come.

W. T. ALAN.

[NOTE.—With the writer's permission, we would add only that the spittle should be natural and not impaired or poisoned by tobacco-juice, if good results from such an earth-dressing are to be expected. —ED.]

THE BIBLE FOR HEALTH.

HOWEVER much professors of Bible religion may ignore hygiene, the Book itself is for the science. A better system of sanitary laws is rarely found than in the Levitical code, nor by any community were they better enforced than by the Jews. Had no more been done than the prohibition of unclean meats—carnivorous animals—the Jews had thereby been ahead of the thoughtless, undiscriminating, sickly world. But more was done. Cleanliness in all departments of life was strictly enjoined. If palsy and leprosy broke out among them, their code recognized it—especially the latter—as a disgraceful enemy, and strenuously provided for its restraint and cure. A better quarantine regulation was enforced to arrest contagious and infectious diseases, than in any of our modern municipalities.

Now, as the old logicians would say, *a priori*, one must believe that an all-wise, benevolent God would provide for the bodily health of his subjects. That splendid piece of mechanism, the human frame, the human system, most fearfully and wonderfully made, it would seem He could never abandon to ignorant abuse, pollution, and premature death. If there indeed be a God, and he indeed fashioned from the elements of matter, Adam, the progenitor of our race, and through him made all of us, how could he fail to instruct us in sanitary science and law to preserve us? Hence, the *a priori* argument is supplemented by the *a posteriori*. The reasonable expectation from the premises is, to some extent, realized in the Bible. The Old and the New Testaments, the Law, the Prophets, the Psalms, and the Gospels, all favor, not to say enjoin, the care of the health and the care of the body.

As those at all familiar with the Old Testament will recall its provisions for health, they need not here be specified. None can forget its labored details to prevent and to cleanse radically the loathsome disease of leprosy. Such special care of this distemper obviously indicates the attention bestowed upon all similar afflictions. But an hour since I read an able article in the Cincinnati *Gazette* upon the learning, wealth, dignity, and power of the Hebrew, occasioned as scores like it, by the refusal of a Saratoga hotel proprietor to admit a Jew as a guest. It is thus seen to be impossible to ignore the power of this peculiar people, nor the reason of their success in life. Persecuted as they have been in all countries and ages, they have not only kept themselves out of poor-houses and prisons for crimes, but have amassed fortunes financially beyond any other people. To say nothing of others, the Rothschilds have, by their vast treasures, controlled States and kingdoms.

This has never been accomplished by a puny, sickly, scrofulous people. Nothing short of sound minds in sound bodies could have achieved it, nor anything short of total abstinence from the use of swine's flesh could have given them this soundness. Not a people on earth who use the flesh of that scrofulous animal are free from the disease with which it is cursed, and of which in many cases it is full. But a slight examination into its condition externally and internally, will prove this. Indeed, the name is enough, since *scrofa* means a sow. Then, to keep clear of the distemper, we must keep clear of its cause. While there is much other diet breeding other diseases, none other can surcharge the system with scrofula as the flesh of swine. And while those who keep their hogs on pure food and drink, and from the filthy wallows so many resort to, have meat less polluted than others, yet its nature can never be thoroughly cleansed. Many more dips in Jordan than were taken by the leprous Syrian, would be needed to purify the nature of this unclean beast, and then only the outside could be washed.

WM. PERKINS.

TOM-BOYS.—It is bad for girls morally, as well as physically, to have no muscular enjoyment on which to expend their spare energy. It will go off somehow, and proprietors of ladies' schools had better see that it does not go in a wrong direction. Muscular exercise is as essential to health of mind and body in girls as in boys. Decorum may be a very desirable thing, but everything must not be sacrificed to it. If there were more physical education in girls' schools, there would probably be fewer French novels, and even worse. The outside of the platter may be scrupulously attended to, and be brilliantly clean, but that is no warranty for the character of its contents. Athletic youth may not always be very strong intellectually, but they are comparatively free from bad practices; and the morals of "tom-boys" would probably compare favorably with those of the demurest boarding-school young ladies.—*Dr. J. Milnor Fothergill.*

NOTES IN SCIENCE AND AGRICULTURE.

Geology and Human Development.—A writer to the *Victorian Review* in discussing the question, "Will the Anglo-Australian race degenerate?" produces data and facts of a very interesting nature, which go far toward an affirmative answer. Observations seem to show that as is the geological development of a country, such is the biological development of the animal life by which it is inhabited; that the human race has obtained its highest development in those regions where the soil had undergone its latest elaboration at the hands of nature. The main differences between the northern and southern branches of the Aryan race, who settled in Europe, is attributed to the influence of the soil. The latest geological formations are found in South Europe, Greece, France, Italy, Spain; also in England. Not so in Northern Europe, Australia, and Russia. In the latter, large areas belong to the transition and secondary periods; while in Persia, Georgia, and Circassia, where nature has carried her inorganic work to greater perfection, we find that here the human race attains its highest beauty and nobility. Note the contrast between Bohemia and the Serb country, as compared with the German or the average Greek; the Dane and Swede as compared with the Lapp and Finn; the Chinese south of Peking and those in the north, around Lake Baikal. In Hindostan those tribes which inhabit a primitive region look like animals, while in the peninsula, in the same latitude, in the neighborhood of Bombay, we encounter one of the noblest and most beautiful types in the world—in soil of later or modern formation. The types referred to are permanent, because faces and figures cast in precisely the same mold are to be seen sculptured on the walls of the temples of Elephanta.

This parallelism between biological and geological development is still further shown from investigations made in France by men of the highest scientific attainments. Mayne says: "The geological distribution of the soil and the chemical composition of the arable lands, the climate, and certain economic and commercial circumstances, and the displacement consequent upon these, are the causes upon which depend the greater or less precocity of the bovine races." Duval calls attention to the peoples, the sheep and cattle of two districts in the same department of Aveyron. The Segala, who inhabit the older formation, are thin and wiry, while the Causse, who live upon the chalk formation, are more robust and better developed. Tremaux notices that the finest stock in France is reared on soils of recent formation, as in Normandy, Gascony, etc., while in Morvau, La Marche, and Brittany, the animals of the same breed are small and scraggy. In view of all the facts adduced, we can not fail to be struck by the intimate relations which appear to exist before geology and biology. That portion of our own country bordering upon the Gulf of Mexico is of later formation, and here we find that the Negro head makes the most rapid approaches to the Caucasian ideal. If these indications are rightly interpreted, we should look to our Southern States for the future Athens and Rome of America.

New and Popular Blackberries.—A fruit-grower comments:

"*Wachusett Thornless* is a comparatively new variety, possessing what may be called an 'iron-clad' constitution. It seems especially suited to cold climates, doing even better in New Hampshire and other northern localities than it does further south. The fruit, though excelled in measurement by some other varieties, is yet of very good size and of fine quality. The thornless character of the canes will be appreciated by those whose dresses, faces, and hands do not usually meet with much sympathy from the ordinary blackberry-bush.

"*Taylor's Prolific.*—This is one of the most popular of the newer varieties, having a number of qualities of considerable merit. Though exceeded in size by some of the older

kinds, yet yielding some specimens one and a half inches long, enables it to feel that it is by no means despised. The berries are of good quality, sweet, and melting. The fruit ripens early and has the desirable habit of remaining on the bushes for some time after becoming ripe.

"*Snyder.*—This is a medium-sized berry of good quality. Like the previous kinds, the plants are very hardy. The canes are unusually productive, giving a good crop each year even upon the open plains of the Western States. This habit of productiveness is, next to its hardiness, its most promising feature, the canes at times bending over to the ground under the load of its fruit.

"*Dorchester, Lawton,* and *Missouri Mammoth* are older varieties of good size, that are liked in some localities. *Wilson's Early* and *Kittatinny* are, however, more general favorites, and give berries of the largest size. They are not as hardy as the others, but in the absence of better varieties have been planted out largely for market purposes."

The Willow as a Preventive of MALARIA.—Mr. Von Lennep, Swedish Consul, writes from "Mahazik, near Smyrna," to the London *Times* as follows: "Before the eucalyptus was ever heard of in Asia Minor, I had seen the bark of the willow used as a febrifuge. I had remarked the easy and inexpensive reproduction of this tree, its quick growth in damp places, its excellent qualities for fuel and for agricultural implements, and its great advantages for strengthening the banks of capricious streams, and had thence taken every opportunity after the winter floods to stick willow cuttings along the banks of streams and in other damp places in my property; also to scatter plane-tree seeds in marshy spots. The result has been that, whereas twenty years ago the full-grown trees in this neighborhood might have been counted, a luxurious growth of willows and plane-trees marks my place, fuel is abundant, fever is steadily decreasing, the meandering propensities of the streams are checked, my neighbors have to come to me for agricultural implements, and I have not far to go for timber for rough purposes."

An Inch of Rain.—Most people appear to think that "an inch of rain" is a small matter—but the "thirsty ground" will show another story. Let us calculate a little. An acre is equal to 6,272,640 square inches; an inch deep of water on this area will be as many cubit inches of water, which at 277,274 to the gallon, is 22,622.5 gallons. This quantity weighs over 113 tons.

Bad Health on Farms.—A correspondent of the *Country Gentleman* writes on this ever-seasonable topic:

"Farmers are wont to think that miasm is mostly confined to cities and large villages, and that country air is pure and farm-houses necessarily healthful; but whoever has carefully inspected the premises of the average farmer, has found abundant occasion for the low fevers which are the scourge of the country as well as the city. In the first place, all farmers should look well to their cellars. In too many of them will be found rotten apples, cabbages, turnips, onions, etc. In some will be found old brine, with pieces of decayed meat, sending forth an odor, when the cover of the barrel is taken off, vile enough to wrench the stomach of a pig. In others there will be musty cider-barrels, possibly vinegar-casks, in which the vinegar has passed on to the putrefactive stage, disseminating the spores of decay and death, not only through the upper part of the house, but even escaping through the cellar windows and polluting the outdoor air.

"Decaying wood generates one of the most subtle of poisons, because the odor is not particularly offensive. Rotten timber in the cellars and moldy wood or chips in the wood-house fill the air with spores, which, breathed by a person in the full vigor of health, may be thrown off with impunity; but inhaled by one whose blood is low may find a congenial seed-bed and generate disease. Under the cider and vinegar barrels, and around potato bins, may often be found old timbers and boards that are full of dry rot, ready to propagate itself wherever the rotten particles may find a lodgment. In the well, also, rotten wood is a subtle poison, more dangerous than a decomposing toad, as the latter makes his presence known, while few tastes are so keen as to detect the presence of decaying wood. Probably the most prolific source of disease around our farm-houses is the cesspool into which pass the kitchen and chamber slops. In the cities and large villages these are carried off in the sewers, but seldom does a farm-house have any system of sewerage. The slops are too often thrown out of the kitchen door, and left to generate vile odors on the surface of the ground. To keep the air of the cellar and around the house pure and sweet, we have never found anything more economical, pleasant, and efficacious than a free sprinkling, as occasion may demand, of dry, air-slaked lime. Chloride of lime is a greater absorbent of vile odors, but this is itself offensive to most olfactory nerves, and is also quite expensive. Common lime is cheap, and if scattered freely in the cellar and wherever there are impurities, will render the air sweet and wholesome, even in the most decomposing dog-days.

Temperature of Soil during WINTER.—Very careful experiments were made in the *Jardin des Plantes*, at Paris, during the past winter to detect the differences of temperature at moderate depths, beneath the surface of the soil, under different conditions. The severe winter and unusual snowfall there, greatly aided the experiments. A striking difference was observed between the results obtained in soil covered with grass and those obtained below a bare surface of the ground. In the former, before as well as after the snowfall, at all depths below that of 5 centimeters, the tem-

perature never descended below 0° C. Registering 3.5° at the depth of 5 centimeters on Nov. 26th, it slowly sank to 0.18° on Dec. 14th. The presence of grass appeared to effectually protect the earth beneath it from freezing at the lowest temperatures attained in that climate. Quite different results, however, were yielded in the absence of grass. In this case, at a depth of 5 centimeters, the thermometer sank below zero on Nov. 27th. Two days later it registered —2.6°. On Dec. 3d, just before the snowfall, it reached its minimum of —3.17°. After being covered with snow it registered —0.8°, and later —1.4°. The snow here appears to act in a certain measure as a screen against changes in temperature, but its conductive properties are still too marked to prevent these changes from being felt sensibly at a certain depth in the earth. In the case of the agriculturist, this slow conduction, when united to the still slower conductive properties of a tolerably thick layer of dead shoots of cereal crops sown in autumn, may frequently insure immunity from freezing to the roots below the surface.

COUNTRY LIFE.

Me, whom the city holds, whose feet
Have worn its stony highways,
Familiar with its loneliest streets—
Its ways are never my ways.
My cradle was beside the sea,
And there I hope my grave will be.

Old homestead! In that old, gray town
The vane is seaward blowing,
The slip of garden stretches down
To where the tide is flowing:
Below they lie, their sails all furled,
The ships that go about the world.

Dearer that little country house,
Inland, with pines beside it;
Some peach-trees, with unfruitful boughs;
A well, with weeds to hide it;
No flowers, or only such as rise
Self-sown, poor things, which all despise.

Dear country home! Can I forget
The least of thy sweet trifles?
The window vines that clamber yet,
Whose blooms the bee still rifles?
The roadside blackberries, growing ripe,
And in the wood the Indian Pipe?

E. H. STODDARD.

A Strange Injury to the Head.—Can a man have two skulls? This question has hitherto been answered in the negative, but a remarkable occurrence is related in the *London Lancet*, which seems to admonish us to review our data in cranial anatomy:

"A sequestrum, consisting of the two parietal bones with portions of the frontal and occipital bones, were recently shown to the Academy of Medicine by M. Benea. The boy from whose head these bones were obtained always had a peculiar, if not pathological, profoundness of sleep. At night neither noise nor blows would wake him. One evening he was left alone in the house. When his parents returned, they found the boy on the floor, his head in the fire, and fast asleep. His cap and hair were burned, and also a large portion of the scalp. He was put to bed still fast asleep. The boy awoke in the morning, and went to the mountains to attend sheep, as usual. Six weeks after the burn, a large slough separated, exposed the cranial vault, and pleased the boy much, as it enabled him to carry bundles of sticks on his head without being hurt by the thorns. Six months later a large piece of bone came away, a portion only being preserved. Oiled linen was applied under the cap, and, a year after the accident, the entire wound was granulating nicely. At one time pulsations synchronous with the pulse of the wrist were observed, but afterward they could not be detected. Hence, it is not improbable a new bony covering has formed. The wound is imperfectly cicatrized, and will probably soon heal. The boy is now well otherwise, and eleven years old. The accident happened three years ago."

Destruction of Ancient Monuments.—One of the most deplorable facts connected with the East, is the destruction of ancient monuments. Marble statues, columns, capitals of exquisite workmanship, and various other works of art, such as exist in ruined cities, are being collected by the natives and burned into lime. Mr. Wood testifies to this fact at Ephesus, and Mr. F. W. Percival states that: "The Temple of Cybele at Sardis has never been excavated, and the soil has accumulated above the pavement, to a depth of at least twenty-five feet; but, even this is not sufficient to preserve it, for I found when I was there that a quarry had been dug on the north side, and that splendid blocks of marble were being broken up into small pieces to burn in the neighboring lime-kilns." Of the Temple of Diana at Tekeh (Artemisia ad Mæandrum), he says: "The walls of the peribolus are standing to a height of about twenty feet, and they have hitherto been the most perfect of their kind existing, but I fear they will soon disappear altogether, for I saw a number of men employed in pulling them down and carting away the stones for building purposes."

There is no apparent remedy for this, and in fact it is no new thing, for this matter of borrowing building materials has gone on for centuries. This system of stealing, also the practice of burning into lime, has been carried to a great extent in Palestine.

Some old ruins have been drawn upon by neighboring and modern towns to such an extent, that almost nothing is left of them. The explorer may be certain he is standing on the site of some ancient and famous city, but it is a matter of wonder to him what has become of it. At the north end of the plain of Gennesareth, there is an important buried town. It is near Khan Minieh, and in our judgment is Capernaum. The walls where

we ourselves saw them exposed, were built of fine blocks of stone, and the whole structure appeared to be of superior workmanship; but these walls are rapidly being dug up by the natives and converted into lime. Facts like these, of which numerous illustrations could be given, ought to stimulate societies and individuals to press the matter of researches in all parts of the East with all possible diligence, in order to rescue the valuable archæological and other ancient treasures which still remain.—*Oriental and Biblical Journal.*

FOWLER & WELLS, *Proprietors.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
NOVEMBER, 1880.

THE CHURCH AND WARFARE.

OUR neighbor, the *Independent*, has been speaking plainly, in a recent edition, to the Church on the subject of war, and rebuking the indisposition of ministers to admonish their people against entertaining a contentious, warlike spirit. We were reminded, while reading the article, of a sermon to which we listened soon after the breaking out of the late war. The minister was one of those warm-blooded, excitable men, who in a public crisis boil over with indignation or enthusiasm, and his address was filled with rousing appeals to the patriotism of his hearers. The text, "Proclaim a war; wake up the mighty men," will, of itself, suggest to the reader the style of oratory that was dealt out on that occasion. I expected, and others, that he would offer his services to the country, after so much hot talk on the duty of citizens, etc.; but he did not. He was a large, vigorous man, a little over forty, and would have made a good soldier, under good discipline. We fear that the Church is too much on the "militant" side to urge measures of peace and conciliation between nations, notwithstanding the mission of Christianity is "Peace and good-will to men," and in spite of strong declarations like that of St. Paul: "Whence come wars and fightings among you? Come they not from hence, even of your lusts?" We can scarcely see how a war could arise between two Christian nations if the Church were active and zealous in performing its duty. Consider the situation in Europe; powerful peoples armed to the teeth, jealously watching each other, and growling if a slight advantage, territorial or political, seems to accrue to one. What, meanwhile, is the great array of clergymen doing? Comparatively nothing. Rarely a voice, even in some obscure place, is heard in earnest protest against the show of arms and the rancor and pride that maintain the display. Europe is cursed by the standing army system. Her people, particularly the working class, are eaten out by its vast expensiveness, and morally impaired by the many pernicious influences of which it is the parent. War is a great crime against society. To use the words of Webster, it is "a tremendous evil." Inferentially, then, the maintenance of a vast horde of idle men in uniform with deadly weapons in their hands, at the expense of popular industry, is a great injustice, and fraught with evil. The record of all wars shows them to be the outcome of jealousy or greed, malice or

ambition on one or both sides. And in their prosecution the greatest sufferers have been the innocent and honest.

What a wide and noble field for a part at least of the thought and work of the minister is here presented to preach peace, reconciliation, and harmony between nations, to awaken in the minds of all classes of men the sentiments of honesty, justice, and magnanimity, so that they shall be slow to take offense, and feel that in all cases it is nobler to offer the olive branch than to throw down the gauntlet.

The man who is contentious, always alert for an opportunity to quarrel with his neighbor, is unhappy himself, and a thorn to his friends, and a conspicuous object for the ministration of the Church. So with those highly "civilized" peoples that keep their hundreds of thousands of armed guards: they are unhappy and despondent. Minister of God, do thy duty in coming to their relief.

BENEVOLENCE AND CRIME.

IN August last a man who had killed his wife under circumstances of a most revolting character was hanged. The funeral which followed the execution was of a character befitting one who had died in the midst of a career of honor and usefulness, rather than a criminal, and that one of so foul a degree as the murderer. At that funeral there was a rich display of flowers, and many people of the educated and well-to-do class were present. It was practically a demonstration of antagonism to the death penalty, but in our opinion he who was made its subject or pretext was very indiscreetly selected. The ladies and gentlemen who entered into such intimate relations with Balbo, at one time fervently pleading in his behalf for the clemency of judges and Governor, and then exhibiting such affluence of sympathy over his coffin, might have found a case of homicide more worthy of their benevolent interest, and so have rendered themselves much less the object of journalistic criticism and popular ridicule.

In one sense those over-zealous persons put themselves on the side of the criminal and against law, to the execution of which they owe their security in person and property, and we can easily imagine the grim enjoyment felt by every desperado in the community who was made acquainted with their conduct. If they sought to make the gallows odious to the intelligent at large, their experiment failed utterly, since it brought the cruelty, ferocity, and indecency of crime into a stronger light by the endeavor to associate with it types of beauty, purity, and virtue. For the gallows, or capital punishment, we acknowledge little favor ourselves, yet can not say that in the present state of vice and crime it would be wise to suspend it. We are, however, emphatically in favor of legislation which will reduce the causes of vice and crime. "Take away the temptation and you take away the sin," said Cervantes. Then the need of extreme penalties for wrong-doing would no longer exist.

Let our excellent, humane, sympathetic people move for the suppression of that great obstacle to moral and intellectual development, the dram-shop. In number the patrons of this school of iniquity far exceeds the number of pupils in our public schools, and the amount of money worse than thrown away on alcoholic drinks, is nearly ten times that paid for the support of schools. See the statistics. Did they stop the promiscuous sale

of the exciting, passion-inflaming, disease-producing stuff, we believe that after a very few years there would be no opposition made to an act for the cancellation of hanging.

If they lack the boldness or conviction which is essential to prosecute a movement directly in the teeth of the liquor-dealers and drinkers, let them undertake a minor task like this, viz: move for a law regulating the sale of deadly weapons. We think that if dealers were required to report the sale of every pistol, with the name and residence of the purchaser, to the police authorities, the moral effect upon the community would be beneficial. There are laws touching the carrying of concealed weapons, but they are a dead letter. Perhaps some kind of an ordinance relating to the sale of pistols and guns would more easily be carried into effect, and only the knave and ruffian, whom the orderly citizen fear on account of the weapons they are known to have at hand, would object.

WHO AMONG US DO NOT READ.

IT is often asserted by people who appear to think that they ought to know about it, if anybody does, that this is *a reading age*, and that Americans are the "head" readers of the world. We had been strongly inclined to believe this, and took it for granted that the omnipresent news-vender, with his display of picture papers, Seasides, Leisure Hours, and miscellaneous joke-books, was but a natural product or expression of a common American mental quality. We travel a good deal. Almost every day finds us in the current of popular movement, and the horse-car, railway train, omnibus, or ferry-boat, sometimes this, sometimes that, sometimes all are used in a day to facilitate changes of locality, and in each case we usually find ourselves among reading people; the business man skimming the newspaper, the working girl absorbed in the *Weekly Tale-Bearer*, the boy intensely devouring the contents of a dime novel. So we had been accustomed to regard the opinion aforesaid as one of indisputable wisdom, and he who should have ventured a doubt concerning it, would have been rated a self-confessed stupid.

We had occasion a few days since to visit a certain part of the city, and for convenience sake walked through a street at the river terminus of which an important ocean steamer line has its dock. It was shipping day, and a long line of loaded trucks and carts extended from the dock up the street for a good quarter of a mile. There was an occasional advance of the line as a cart at the front having delivered its freight, was driven away, but this movement was chiefly undertaken by the horses, which acted quite independently of their drivers, being accustomed doubtless to this sort of work. We calculated, after observing two or three of these advances, that three-fourths of the carts would be kept waiting from half an hour to two hours for their turns.

Meanwhile, what were the drivers doing? Making excellent use of this leisure opportunity, the reader will answer, for the improvement of their minds; in other words, reading, of course. No. Sadly we utter it, no. We looked with earnest scrutiny all along the line, and saw that every driver was indulging in a posture of the utmost indifference to the passage of time and its economical possibilities. Some were bent forward on their seats with elbow on knee, gazing

vacantly forward, or ogling the passing pedestrian. Some were stretched at full length on their seats, apparently enjoying an accustomed afternoon nap. Some had descended from their wagons and were leaning in a listless way against the wheels, or sleepily lounging about on the sidewalk. Not one held in his hand the expected book or paper. Shades of John Hay and the Danbury Newsman! Can it be that the critics of the "higher literature" have been misled in their conclusions? "A reading age," and "a reading people," and to have thrust in our face the spectacle of a hundred stalwart men lazily dreaming away the hours of a quiet summer afternoon without one of them making even an apology of an effort to vindicate the reputation of his fellows from the grave indictment of casting a stain upon the high literary character which Americans have hitherto worn!

Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

WE CAN NOT UNDERTAKE TO RETURN UNAVAILABLE *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Anonymous letters will not be considered.*

VINEGAR.—*Question:* Why is it so difficult to find good cider-vinegar nowadays? My wife scolds a good deal about the rotting, poisonous stuff the grocers sell for vinegar.

Answer: The main reason is that genuine cider-vinegar can't be made in a hurry. A good article of cider will be two or three years in becoming vinegar, unless kept at a high temperature, when a few months may suffice. The larger portion of that sold as cider-vinegar is as innocent of apple-juice as possible. Better not use the sour stuff any way; but eat fruit, which will supply a form of acid more suitable for your stomach.

WATER AT MEALS.—C. L. H.—It is best to drink no water while eating, but on finishing a meal, a glass of pure water may be drank to serve for the cleansing of the mouth as well as to moisten the food in the stomach, and thus provide such liquid as is demanded by the process of digestion. People dyspeptically inclined should be very particular in the matter of drinking. The sense of thirst is a guide for drinking. It is not injurious to drink freely of water in warm weather; the perspiration then being rapid, much water is required for the processes of nature, particularly during severe muscular exertion, but one should not drink iced-water while perspiring freely under any circumstances. It is best to take water moderately cool, not disagreeably cold, as we think iced-water is to the natural taste.

LARGE, STRAIGHT MOUTH.—S. J. G.—A large mouth, not a deformity, is regarded by physiognomists as indicative of breadth and strength of character, especially if it be straight. Men who are noted for their decision and power, have straight mouths generally.

RUMBLING NOISE IN THE BOWELS.—You are probably afflicted with what is popularly called wind dyspepsia. Avoid eating food which has a tendency to the production of gas. Excessive drinking of liquors serves to generate gas.

PORK EATING.—*Question:* Is it right, according to health or the Bible, to eat pork?

E. D. J.

Answer: No. This subject is briefly discussed in this Number of the JOURNAL.

PRESCRIPTION.—D. ONT.—Your question being of a private nature, you should have inclosed the necessary postage-stamp for an answer.

FRECKLES.—A. C.—These troublesome patches indicate a disturbance in the functions of the skin. The capillaries are congested with effete or excrementitious matter, hence the yel-

lowish discolorations. Persons who are troubled with this are in the habit of eating food which has too much carbon in its composition. They are fond of butter, sugar, salt, gravies, rich sauces, etc. The character freckles represent is that of carelessness in diet, perhaps in washing, too, rather than anything of a special moral type.

REPUBLICATION.—E. H. R.—We thank you for the suggestion; it is so long since the "Theories of the Organization of Mind," by Dr. Washington, was published, it would probably be new to the great majority of our readers. At the time the paper was published we were strongly impressed by its value, and have no doubt it would be acceptable to all.

MEMORY.—What is the best method by which one can improve his memory for names and quotations? I have a first-rate memory for dates, numbers, and substances of stories, etc., but it is almost impossible for me to call to mind names, or to make use of a quotation at a desired moment, when it is of the most familiar kind.

Answer: We suppose your Eventuality is moderate in size and activity, while Calculation, Time, and your reasoning faculties are fairly developed. Cultivate the habit of fixing your attention upon what you read, especially that which contains names and phrases which you would keep in memory. Attention is the one chief element in memorizing. A little book published at this office on "Memory and Self-Improvement" contains suggestions of value to you.

EARS AND THEIR SIGNIFICANCE.—F. F. M.—The ears bear a close relation to the temperament of a person. Those having a fine quality of organization, and coincidentally a marked expression of the Mental temperament, usually have symmetrically, delicately chiseled ears; while those who are coarse in organization have large, broad, heavily-wrought aural appendages. The lower or pendulous part of the ear, to which you allude, differs much in different persons; with some it is long, soft, and velvety; with others it is hard and gristly, the type which usually presents the Motive temperament in strong predominance.

ABDOMINAL TROUBLE.—J. M. P.—We infer from your description that you are afflicted with a form of inflammation of the digestive tract; that it has close relation to the disease in the feet, we are doubtful; *that* may have proceeded from a depraved condition of the blood or a defective circulation, but is not necessarily the resultant of a bowel trouble. We think that fomentations in the hydropathic manner would be a benefit to you. The process is described in the hydropathic or hygienic manuals.

ACTS OF CRUELTY IN THE BIBLE HISTORY.—I. W. R.—There are many things in the Scripture record which are hard to understand. We have been puzzled often enough by the statements you quote, and we have sought to "reconcile" them by attributing their apparent cruelty or barbarism to, First, The condition of mankind at the times. Wars in the ancient days were conducted in the most destructive manner. The conqueror ravaged the country of the conquered, sought to destroy it utterly; or he made it his own by enslaving or dispersing the inhabitants. To be sure, the Bible historians speak as if they were declaring the counsels of Jehovah, but their language may be somewhat inflated, and akin to the style of writing then in vogue and still common in the East. Second, We only look upon these terrible occurrences as punishments for the idolatry and corruption of the peoples upon whom they were inflicted.

With reference to the death of the swine related in the New Testament, we think one may take their destruction as an expression of the will of God with regard to their use; swine flesh being prohibited as food, therefore the keeping of swine, evidently for such a purpose, would be contrary to the express command of God. We regard as the most convincing proof of the truth of Scripture, its inherent quality, the high tone of its moral teachings, the naturalness and fullness of its narrative (by fullness we mean the lack of attempt to condone or excuse the improper conduct of nations and of men, not excusing the fault of its principal characters, while at the same time it holds up their virtues); its general comprehensiveness so far as human character is concerned, and the directness of application to every conceivable phase of conduct.

We think if you were to read Paley's "Evidences of Christianity," you might obtain many instructive suggestions.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

SPIRITUAL TELEGRAMS.—Life is a web of mysteries, but "the mystery of mysteries" is the workings of the human soul. That intelligence of a state of being or a state of events is conveyed from one kindred spirit to another—sometimes direct, sometimes through the agency of a third—separate and apart from man's instrumentality—is a fact which I think has fully established itself in the mind of every intelligent and observant man and woman.

Through this mysterious and invisible agency long and wearisome journeys have been attempted, sufferings relieved, the last kiss given, the final farewell spoken, ere the soul of some dear loved one winged its way across the mystic river to the land beyond the tomb.

As space pleads brevity, we will record but a few of the many instances brought under notice.

Mr. A., a Christian gentleman of undoubted veracity, states that being engaged upon a certain time in hewing timber, he wounded his foot severely with the axe. As he was a great distance from home and among strangers, his situation caused him much anxiety and trouble of mind. That night intelligence of the event was conveyed to his brother remaining at home, who supposed that he had dreamed. So impressed was he, however, with the feeling that the accident had really occurred, that at early dawn he saddled his horse, sought out his absent brother, and found his condition to be *precisely as stated in the seeming dream.* Had this been an ordinary dream he would have banished all morbid forebodings from his mind—but—a *message* had been transmitted and the messenger ever faithful urged through the channels of brotherly affection and esteem, compliance with its demands.

A lady residing in St. Louis was deprived by death of an amiable and much-loved daughter. The night following the interment of the body, she received a *message* stating that —— was alive in her coffin. Although it was a late hour of the night she hastened to the residence of her son-in-law, and through tears and entreaties induced him to accompany her to the tomb. Upon opening the vault they found the lid of the coffin partly raised, the body turned upon its side, the grave clothes rent, and every evidence that the entombed had awakened from that death-like sleep, but life was now extinct; help came too late. The messenger was prompt—"souls chained to clay" were tardy and the grave had won.

In the case of Mr. Danskin, who was telegraphed for by his dying wife, we quote:

"I became interested in the movement; was engaged with the Business Committee, and anticipating a pleasant week among our friends, when suddenly on Wednesday afternoon I received a strong impression to return home immediately. After some efforts at resistance I reluctantly complied, feeling that I had not yet accomplished my work in Providence. When I reached Baltimore, I learned that I was probably just in time to see the last earthly moments of one who has been the central thought of my life for nearly twenty-seven years. WASH. A. DANSKIN."

We might mention the case of the German mother of Brooklyn, O., who disinterred with her own hands the body of her child which had been buried alive. Of Prof. J. H. Hertig, a noted lecturer on Phrenology, who was apprised of his brother's illness through this mysterious telegraphy; but we will not multiply proof.

G. Albert Loomis, in his "Nature and Power of Influence," sustains me when he writes: "There are some who are so sensitive as to be able to receive intelligence from an immense distance, and to affect others at a distance; we may have experienced the fact in a minor degree." The author of "Brain Waves" strengthens my theory also. I am not a believer in Spiritualism as professed—do not believe that the souls of departed friends revisit or communicate with those on earth—but I believe that there is spiritual intercourse on earth, although a great distance may intervene between those who communicate to one another. The bond of fellowship must also be close. We find that this power exists between husband and wife, parent and child, brother and sister, and only those who hold true fellowship with one another. Heaven-ordained marriages are a union of soul and body—a husband and wife are literally one, and consequently if one suffers, the other in some way partakes of that suffering also. H.

THE PHRENOLOGY OF A SMILE.—What is a smile? All infants laugh perhaps. But what is an infant laugh? A smile, you say, and you smile as you say it, seeing you are as far from the answer as before. Let us analyze a smile. Let us remove the outer covering and inspect the mechanism which produces and controls this smile.

Outwardly, a smile is a contraction of the muscles of the face, and particularly those of the mouth. This muscular contraction is caused by the psychological action on them, through certain fixed points or poles situated particularly around the mouth, of a current of galvanism (or some similar psychological force) emanating from the organs of *Approbativeness*, *Amativeness*, *Adhesiveness*, *Suavity*, *Philoprogenitiveness*, *Mirth*, *Self-Esteem*, etc.

The diagram on the opposite page will illustrate their action, the *dashes* representing the lips, the *figures* the poles, and the *letters* the organs.

Now let us suppose the organ of *Approbativeness* (Ap) to be excited. A current immediately flows from that organ to the pole (1), from which point it attracts and draws towards it the ends of the lips in what may be termed a longitudinal smile. *Suavity* (Sy) also acts through this pole, and produces a similar smile, but with more intensity.

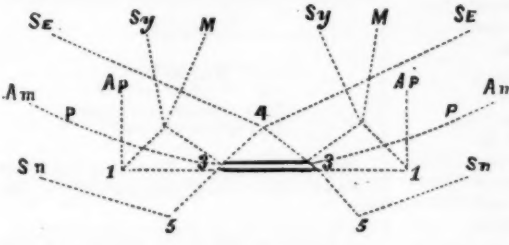
When mirth (M) is excited the galvanism generated flows to the pole (2), and from that point draws the corners of the mouth upward in the smile of mirthfulness.

Then when Philoprogenitiveness (P) is excited,

a current flows to the pole (3) situated at the end of the lips, and from thence draws the corners of the mouth in a sort of knot, as it were; and it is this spot, right over the pole (3), which the mother offers her child in the parental kiss.

Then we have the smile of Self-Esteem, which is caused by the pole (4) being acted upon by the organ (SE), thus drawing the upper lip toward it and producing the proud, self-satisfied smile. Suspicion, produced by the action of Cautiousness and Secretiveness, acts upon the pole (5), and draws the lips downward in the smile of unbelief.

Amativeness acts through the pole (3), producing in normal action much the same smile as Parental Love.



The smiles above described are the result of the action of but one or two organs; but complex smiles are often produced by the combined action of several organs. Thus a smile of social interest may be caused by the combined action of the organs of Adhesiveness, Amativeness, Philoprogenitiveness, and Suavity, or Approbativeness.

The eye is also more or less concerned in a smile, its muscles being acted upon through its own proper poles, and in concert with the lips.

JAY EDGARE.

"EASY DIVORCE."—The able article on this topic that appeared in the *North American Review* for June, and which was commented upon by the editor of the PHRENOLOGICAL, was particularly interesting to me from its importance, and yet does it not seem as if there were some exceptional cases, not one of which is mentioned? Not but that what is stated is true in two-thirds of the cases, but how many suffering hearts are bleeding in America as well as in other lands, whose owners did not marry in haste, yet were not fitted for each other. Thus one was obliged to go up to the higher, or the other come down to the lower, always creating a difference. It may be their cause of suffering is in a different form. They may be on the same level and yet their tastes are different. They can not or do not mutually agree on anything, and thus as they go on in life new causes of discord are continually springing up.

They have a certain amount of love for each other, and that, with a love for their children, prevents them from being divorced, and they live on with an utter want of harmony in all that they do.

If our young men and women were taught to seek a suitable companion, what untold suffering would be avoided.

To accomplish this ought not our young men and women to study each other's characteristics and idiosyncrasies?

The science which gives the needed information on this subject might well be taught in our public schools and colleges, and thus supply our youth with a much better idea of the essentials of fitness, and why such a one is better suited for their happiness than another; and thus in choosing a companion, they may be enabled to choose one with whom life would be happy and useful. Then might we be rid of these sorrowing mothers and fathers who are not fitted for each other.

Then we should find that there would be none of the trials of husbands and wives living together for their children's sakes, striving to keep their marriage vows, though they are not able to do it as they should, having married above their station or perhaps below it, or may be having chosen a companion who could not sympathize with their tastes and feelings.

I feel and know from what I have seen, that there are those who suffer, in the way I have mentioned, and they are as much, if not more, to be pitied, as those who marry in haste and repent at leisure. The latter are usually frivolous, capricious, and superficial, while the former are nearly all consistent Christians, who made their mistake from a want of knowledge.

I do not mean to convey the idea that this is all Phrenology and Physiognomy are good for, but if they can accomplish this and remove some of the *silent* sufferings of mankind, *who* will question their further value? CECIL H. HOWARD.

SIGHTS IN NEW YORK.—"ALVINE."—Among the more noteworthy features of interest to the stranger are: the Metropolitan Museum of Art, Central Park, the Zoological Garden, High Bridge, the Elevated Railways, the Custom House, U. S. Treasury Building, Western Union Telegraph Building, Cooper Union, Grand Central Depot, the Bridge Towers and construction, Broadway, Fifth Avenue, and Madison Avenue, Sixth Avenue and other business centers. There are numerous pleasant and instructive excursions to suburban places, etc. By procuring a Guide-book—which will cost you 25 or 50 cents, you can make a tour through the city in a systematic and rapid manner.

THE UNKNOWN VOICE.

I SAT in the church one morning,
In the loveliest month of the year,
And the air was all laden with sweetness,
The Rose—queen of flowers—was near.
I sat by an open window,
So the songs of the birds floated in,
And they mingled with prayer and praises,
With confessions of sorrow and sin!

The trees, with their fluttering leaflets,
Seemed to wish for a part in the song,
And were helped by the delicate zephyrs
Which ever came gliding along.
But even the odorous breezes
And the songs of the bird and the bee—
As I sat by myself, nigh to fainting—
They were no evangels to me.

I scarcely could breathe responses
In the beautiful, pure Litany;
From senses all things were receding,
Afar seemed the preacher to be.
But, hark! what a voice sings near me!
'Tis a voice filled with pathos and love;
'Tis a voice of such sweetness and clearness,
It surely the coldest must move.

'Twas *not* just the voice of the singers,
Those, I mean, who sit up in the choir;
Not a voice that was used for attraction—
Such voices you often can hire.
But, oh, it was pure in utterance,
Every note filled with trust and with love!
And I know well that soul's fervent offerings
Were wafted in song up above.

It waked up my slumbering senses
To the truths that were precious and dear,
As I sat in the church on that morning
In June, fairest month of the year.
I looked, when the service ended,
To find out who the singer had been,
And I saw—just a plain, simple woman,
As anywhere you may have seen.

And who could have thought such power
Or such music lay hid in her throat,
Or have dreamed of the delicate sweetness
That ever to heaven should float!
And so, I exclaimed, the Poet,
Pure his life, or distorted by wrong,
The sweetest and best that's within him
He pours it all forth in his song!

GRACE H. HORR.

PERSONAL.

VICTORIEN SARDOU, the eminent French author, has bought the door which Charlotte Corday opened when she entered Marat's bath-room in order to kill him.

MRS. HAUSSMAN, of Texas, sent to Galveston the first bale of cotton in the crop for five seasons, receiving the usual premiums for it. This summer she received four hundred and thirty dollars for two bales sent to Houston.

KING LUDWIG II. of Bavaria recently celebrated his birthday anniversary and the seven hundredth anniversary of his dynasty, the Wittelsbachian. The King did not show himself in his capital, but caused a letter to be written, thanking his people for their congratulations and asking them not to go to any great expense on his account. They say he's *eccentric*—for a king.

PROF. ALEXANDER GRAHAM BELL has received the Volta prize of the French Academy of $10,000 for the telephone, as "the best application of electricity." Edison doubtless expected it too.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

DOST thou love life? Then do not squander time, for that is the stuff life is made of.—FRANKLIN.

A SMILE is a light in the window of the face by which the heart signifies to a friend that it is at home and waiting.

TIME is the ally of truth, and wise men believe nothing but what is certain and what has been verified by time.—DRAPER.

THE final result of human inquiry is the discovery that man is incapable of absolute knowledge; even if the truth is in his possession he can not be certain of it.—DEMOCRITUS.

LIFE must be measured by action, not by time; for a man may die old at thirty, and young at eighty; nay, the one lives after death, and the other perished before he died.

THE mind always influences physical health. To be perfectly healthy one must be morally pure and good. Consciousness of sin always depreciates the strength of bodily functions.

REJOICE, oh, grieving heart,
The hours fly past;
With each some sorrow dies,
With each some shadow flies,
Until at last,
The red dawn in the east
Bids weary night depart,
And pain is past.

—*Proctor.*

LIFE is a book of which we have but one edition. Let each day's actions, as they add their pages to the indestructible volume, be such as we shall be willing to have an assembled world to read.

OUR motives are never quite so good as we think, and never quite so bad as our enemies suppose. Our best is inwoven with evil, and our worst, let us hope, has some strands of good. Only God can unravel the complexity.—EDWARD EGGLESTON.

WHAT IS THE WORLD?—A dream within a dream; as we grow older, each step is an inward wakening. The youth awakes, as he thinks, from childhood; the full-grown man despises the pursuits of youth as visionary; the old man looks on manhood as a feverish dream. Is death the last sleep? No; it is the last and final awakening.—WALTER SCOTT.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

NEXT to a clear conscience, for solid comfort, give us an easy boot.

MEN who live in glass-houses should be conservatory in their opinions.

NOTHING embarrasses a man more than to see a quarter on the floor of a crowded street car, and not know who dropped it.

WE wonder how many of our ministers this fall will drop an occasional aside into their sermons, beginning: "When I was in ——."

AUGUSTA DABBLA (artist), "Don't you think it is about time I exhibited something?" Severe critic: "Yes, a little talent, for instance."

TOMMY went fishing the other day without permission of his mother. Next morning a neighbor's son met him, and asked: "Did you catch anything yesterday, Tommy?" "Not till I got home," he answered sadly.

LADY—"A pretty sight, isn't it, doctor? I don't see any of your little ones here? I hope you don't disapprove of juvenile parties?" Dr. Littletums (famous for his diagnosis of infantile diseases)—"I, my dear madam? On the contrary, I live by such parties!"

A TRAMP woke up suddenly with cold sweat standing in great beads upon his forehead. "What's the matter," asks his companion. "A frightful dream! I dreamt I was at work!" "I told you that last mince pie would give you a horrid nightmare."

A DROLL fellow fished a rich old gentleman out of a mill-pond, and refused the offer of twenty-five cents from the rescued miser. "Oh, that's too much!" exclaimed he; "tain't worth it!" and he handed back twenty-one cents, saying calmly, as he pocketed four cents, "That's about right."

MEN are a good deal like hymns. There are short-metre men, sharp, blunt, and hasty; there are long-metre men, slow, weighty, and dignified; hallelujah-metre men, mercurial, fervent, and inspiring; and there are eights-and-sevens men, gentle, genial, and delightful. There are many too who are peculiar-metres.

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

CHRISTIAN SOCIOLOGY. By J. H. W. Stuckenberg, D.D., Professor in the Theological Department of Wittenberg College. 12mo, Cloth. Price, $1.50. New York: I. K. Funk and Company.

It is apparently strange enough that the author claims for his treatise, the opening practically of a new department of thought. Yet as a German writing for Germans, he is in the main right, while for Americans who are acquainted with the works of Osgood, Bushnell, Aikman, and Weaver, he is partly wrong. We say partly, because it is fair to admit that Dr. Stuckenberg has taken the lead in outlining a system or method for the study of Christian sociology, and thus as it were given a scientific or practical turn to the subject.

We have for many years thought that society needs nothing for its elevation in all that relates to the useful and pure and happy, so much as a strong infusion of Christian principle, and cordially welcome every suggestion that will help toward making the doctrine of Christ thoroughly understood.

The author finds the essential elements of his system in the New Testament, and compares the teachings of that book with those of German, French, and English rationalists. The life of Christ is an exemplification of the sociology he taught to the farthest degree that a teacher and missionary could go. The truth he taught "is not abstract or speculative, but it is practical, adapted and applied directly to human needs." Being instinct with life it commends itself to the living spirit and thus must be the fundamental constituent in the society of which he is the author.

The development of the new life communicated by Christ would regenerate men, and free them from the dominion of appetite and passion—saving them not only for the next world,

but also for this. Inferentially, then, the spirit of man is the controlling agent in this system, the higher nature subordinating and controlling the lower, ennobles man and purifies all his relations.

REPORT ON EDUCATION. By E. Seguin, United States Commissioner on Education at the Vienna Universal Exhibition. Second Edition. (Authorized and Revised by the Author). Milwaukee, Wis.: Doerflinger Book and Publishing Company.

Dr. Seguin's first published report proved the wisdom of his selection for the peculiar and difficult duties of a Commissioner on Education at the Vienna Exhibition. It was a review in detail of the different school systems represented on that occasion, and contained many suggestions of great value to educators everywhere. This new edition is much more elaborate, bearing on every page the marks of careful preparation. As the author has made the study of feeble-minded children a specialty for many years, the book has the character of a scientific manual in which the learning and experience of one of our best known observers are embodied. We have found it exceedingly interesting, and commend it heartily to the intelligent parent and teacher. In statements like these, Dr. Seguin touches the heart of the subject of education, we think: "Youth has a horror of the vacuum; and if their emotional capacity is not educated in and for their horizon, they are carried away from a home empty of ideas, into the vortex of competition where the weak soon perish. For this individual evil and social danger, a vague culture and non-physiological education are responsible."

"What we make children love and desire is more important than what we make them learn; at any rate make them learn what they can reach, and make them love what they learn."

PUBLICATIONS RECEIVED.

THE HERMITS. By Charles Kingsley, Canon of Chester. Complete. Price, 15 cents.

TWO OF THE NAME, in "The Philadelphia Library." By Col. June Lewis. Quarto, paper. Price, 15 cents.

THOMAS BROTHERS' MUSICAL JOURNAL contains musical news and comments with three or more compositions, vocal and instrumental. Published at Catskill, N. Y.

THE WIDE-AWAKE for October is full of life and fun, and contains also here and there golden grains of useful admonition for young people. The biographical sketches on popular artists which have been running through recent numbers, are interesting and useful. Published in Boston, Mass., at $3.00 a year.

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